STAR

TEST REQUEST FORM

Sample/Specimen No	. <u>D-032</u>	Cost Code/Work Order No. ED 332
Requested By: Org	. 80232	Person J. LNDOCC Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
Sieve AMALYSIS	/	ETAL-07
Hypromoter	/	ETAL-07 (DE REQ)
MONSTURE		ETAC-14
NA	NA	N/A
,	•	
Remarks FIED S	AMPE	Received By: R.G. Alexannex Date 1-18-90
MW-12-1		Approved By: R. 6 Alex MIDEL Date 1-29-9



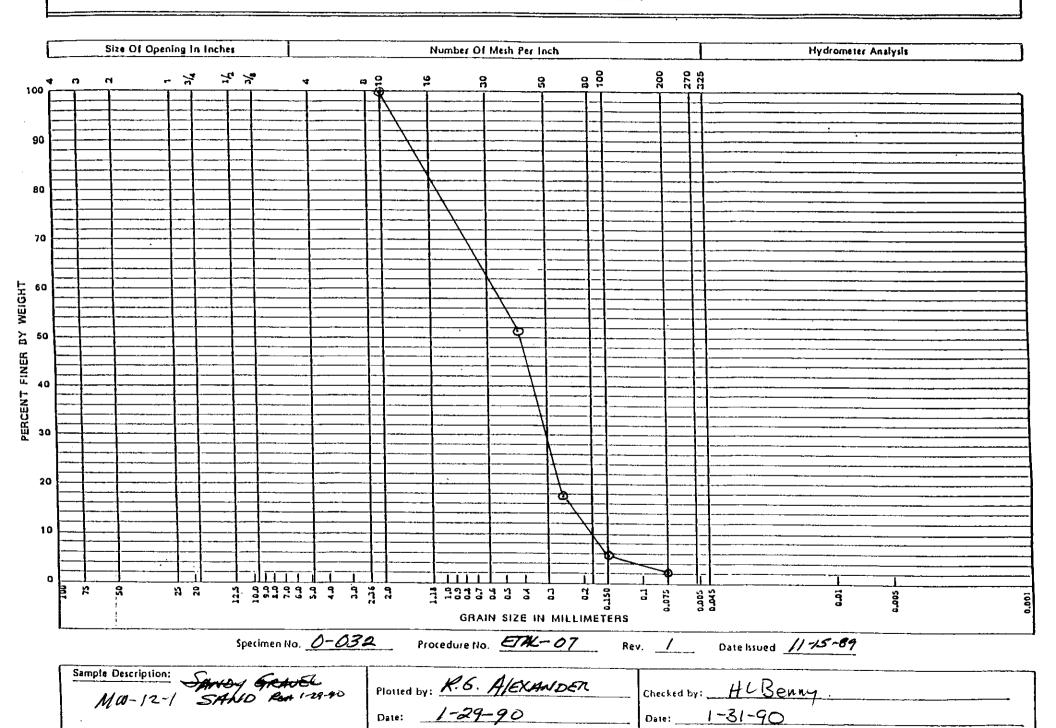
			SIEVE ANAL	YSIS DAT			
		e ID <u> 6</u> -			Page/		
	Tes	sted By_	P.G Alexan	oen_ i	ate /-29-	90	
	Pre	ocedure <u>4</u>	ETAL-07 Re	v <u>/</u> 1)ate Issued_	11-15-64	
		EQUIPME Balance	NT ITEM CAL	3304	3-25-	90	
		Thermome	eter	0006 N/A	2.6-	90 74	
		ription			- Sieve Ti	•	min)
		by 🔀	splitting)	(A)	stock	plle	<u></u>
BEF	(B) ORE TE	est wt.	AFTER TE	ST WT. ALA	$\frac{B}{B-A} \times 100 = 0$	MA % LOSS	3
Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative 7	Cumulative Pass	% Pas
N/A							
			<u> </u>				
					ļ		
							
							-
	#10	154.00	Ø	Ø	6	100	100
	#40	, , , , , ,	74.88	48.6	48.6	1	-
	#60		126.62	82.2	82.2.	17.8	17.8
	#100		145,06	94.2	94.2	5.8	5.8
4	# 200	•	150.40	97.7	97.7	2.3	2.3
	Finess A	Modules (FN	() N/A	(See ASTM C 1	36-83, Section	8.2)	
MATERL	ALS FIN	VER THAN	NO. 200 SIE	VE BY WASE			
D=Origina	l Dry We	eight of Sar	-	1 <u>54.60 m</u>	Remar WASH SM	ks FINE GI AU FIELD	CADINK
E=Dry Wei	=	Sample Afte (D-E)/D> 3	er Washing/Sleve (100	1 <u>50.40</u> g	SHAN	PLE	
OP		R WAS TR	CURATELY AND U		ATED INSTRU		ST

A-8400-204(2-87)

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. <u>ETAL-14</u> REV. NO. <u>Ø</u>

THERMOMETER NO. <u>0006</u> CALIBRATION DUE DATE <u>2-6-90</u>

					,	
SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-032	5435.76	5254.71	835,74	4600.00	4418.95	4.10
					/	/
-						
						-
						
<u>-</u>			\times		1	
						· · · · · · · · · · · · · · · · · · ·
	1,				i	

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 1-29-90

Westingh	ouse
H a nford	Company
	Yestingh H a nford

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CHAIN OF CUSTODY

1		CHAIN OF CO	ז עטו צ	
Company Contact: _	Jw Und	Iberry	Telephone	6.5005
Sample Collected by	R.D.M.II	er	Date: Inclusive	dales Time: 1/4
Sample Locations:	MW-12			·
			Field Logbo	ok Page No.:
Remarks: Field Los	g book No# 0	NHC-N-306-	3	
Method of Shipmen	t: <u>qoit ve</u>	hide-hand	carry to J. Ale	rander 2101-11 lab
		Sample Identi	ification	.i.
uw-12-1, plast	e bag	· · · · · · · · · · · · · · · · · · ·	MW-12-12, 5/	's liner-6"
MW-12-2 "	£1			
MW-12-3, "	.,			<u>.</u> -
MW-12-4 "	.			
MW-12-5	Li .			
MW-12-4 .				÷
MW-12-7 "	\tag{h}			
MW-12-8, "	11			
MW-12-9, "	•	······································		
MW-12-10	t ·			
MW-12-11, 5/5 1	iner-6"			
CHAIN OF POSSESS	SION			
Relinquished by:		Received by:		Date/Time:
Aundon (GAI)	Pow O Abber	910 tindle	ra JWLindbera	Jan 16901455
Relinquished by:	, , ,	Received by:	7	Date/Time:
Julindberg Ho	Mary	R.G Alexa	MOER	1-18-90/0610
Relinquished by:]	Received by: K	4 Alepand	Date/Time:
Relinquished by:		Received by:		Date/Time: เชื่
			· · · · · · · · · · · · · · · · · · ·	

W	Westingh Hanford	ouse Company
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SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION CERCLA I	100-EM-1, Groundwater Monitoringle
Collector: Rand Miller Do	ite Sampled: Jan13-16 1990 Time: NA hours
Company Contact JWLindberg	Telephone (FP4) 376-5005

SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS REQUESTED	
MW-12-1	I plastic bag	Soil	Partide Size,	Moisture
MW-12-2	11	"	11	И
MW-12=3	i t	13	11	11
MN-12-4	Ч	11	H	ı f
MW-12-5	11	11	u	ıı
MN-12-6	1)	-11_	п	R
MU-12-7	0	U	11	11
MW-12-8	1	11	1)	()
MW-12-9	.)	11	11	11
MW-12-10	11	11	11	11
MW-12-11	1 6" Split Spoon Liner	. 11	Particle Size,	Atterberg Li
MW-12-12	Л	1)	Permeabilitu	·

Field Information Well to on the east side of	the HornRapids L	andfill.
Special Handling and/or Storag	•	
PART II: LABORATORY SECTION		··
Received by	Title	Date
Analysis Required		

indicate Whether Sample is Soil, Sludge, Water, Etc.

Back of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Released By Operational Health Physics	Released By Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	\$4-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Released By Operational Health Physics	Bidg. NW-12-4 Date 1-13-90 Released By
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg. <u>MW-12-5</u> Date <u>1-13-90</u> Released By <u>Boy</u>	Bldg. NW-12-6 Date 1-13-90 Released By Sec.
Operational Health Flysics Remarks	Operational Health Physics Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
8idg. MW-12-7 Date 1-15-90	Bldg. MU-17-8 pate 1-15-90
Released By Operational Health Physics Remarks	Released By Operational Health Physics , Remarks

54-3000-022 (09/88)

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No	. <u>0-033</u>	Cost Code/Work Order No. ED 332
Requested By: Org	.80232	Person J. LINDBERG Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANKLYSUS		ETHL-07
HYDROMETER	/	ETAL-07 (IF REQ)
HYDROMETER MOISTURE		ETAG-14
NA	NIA	W/A
	•	
Remarks_ <u>MW -ルン-ユ</u>		Received By: RG Alexander Date 1-18-96 Approved By: RG Alexander Date 1-28-96

							
			SIEVE ANAL	YSIS DAT	A SHEET		
	Sampl	e ID <u>O</u> -	<u>033</u>		Page/_	of/_	
	Te	sted By <u>A</u>	R.G Alexanu	DEM I)ate <u>/-29-</u> 2	70	
	Pr	ocedure_	Re	v	Date Issued_		
EQUIPMENT ITEM CALIBRATION NO. DATE DUE Balance 3304 3-25-90 Thermometer 0006 2-6-90							
Sampl	e Desc	ription	SANO		Sieve Tir	ne <u>///</u> (r	nin)
	reduced	by 😿 :	plitting [quartering	: stockp	ile	
Ber	(e) ORE TE	est wt.	AFTER TE	(A) ST WT.	$\frac{B-A}{B}X \ 100 = 2$	V/2 % LOSS	
Sleve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative %	Cumulative %	% Pass
N/A	2	4614.13	Ø	Ø	Ø	100	100
	11/2	ľ	Ø	9	Ø	100	100
			176.72	3.8_	3.8	94.2	96.2
	3/4		212.74	4.4	4.6	95.4	95.4
	1/z		292.83	4.3	4.3	93.7	93.7
	3/8		338.02	7.3	7.3	92.7	92.7
	44	\	390.35	8.5	8.5	91.5	91.5
	#10	4614.13	432.83	9.4	9.4	90.6	90.6
	#40	147.58	15.40	10.4	10.4	89.6	81.2
	#60		51.20	34.7	34.7	65.3	59-2
	#/60		80.96	54.9	54.9	45.1	40.9
*	# 200	1	104.03	70.5	70.5	29.5	26.7
	Finess l	Modules (FM) <u>M/A</u> (See ASTM C 1	36-83, Section	8.2)	
MATERL	ALS FI	VER THAN	NO. 200 SIE	VE BY WASE			
	-		saing a 200 Siev		Remark	es Fuk GKAL	nlo
_	-	eight of San	•	14 <u>7.58 </u>	SMA	L FEED	
E=Ury We	-	Sample Afte (D-E)/D> X	r Washing/Sleve 100	1 <u>04.05</u> %	SAMP	KE	
OP	L DATA ERATO	ARE ACC	URATELY AND AINED AND US			MENTS	T

A-5400-204(2-87)

SOIL MOISTURE DATA SHEET

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WI.	WET WT. SOIL	DRY WT. SOIL	% WATER
· · ·			 			
0-633	5505.23	5198.13	584.00	4921.23	4614,13	6.66
			ļ			/
					· 	
		\			\ <u>.</u>	
						<u> </u>
	<u></u>			<u>/</u>		

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					<u> </u>	
			-i			
						\ \ \
/						$\overline{}$

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 1-29-90

Sample	ID <u>O.</u>	033			Pag	e of	<u>/</u>	
						-90		
•	į	Procedure <u>ET</u>	4C-07 Rev_1	Date Issued/	1-15-89			; ;
		EQUIPM	MENTITEM	NO.	DL	IBRATION IE DATE		•
		<u>Hydrometer</u>		1000		-16-91		
		Balance Thermomete	er/Thermocouple	3304		-25-90 -9-91		
Specifi	ا c gravity of	Sample 2	,70		VEROSCORIO	* BAOICTI LDC C		
% Passi	ing No. 10 S	ieve	90.6 (%	· (6)	YGROSCOPIC			
Hygros	copic Corre	ction Factor			ainer + Air D ainer + Oven	-		
	W	EIGHT OF SAM	PLE		ainer			-
Wt. Co	ntainer + S		(g		ntent			
	ntainer	<u></u>	<i>NA</i> (g				· · · · · · · · · · · · · · · · · · ·	į
Wt. Soi			<i>95.11</i> (g	•	<u>R</u>	<u>EMARKS</u>		1
	,			Inte				
		POSITE CORRE		\ <u></u>	onsiderab			<u> </u>
			<u>24.2</u> °C		op afte re 900n		reading.	<u> </u>
2nd Re	ading	<u> </u>	<u> </u>		· · · · · · · · · · · · · · · · · · ·	o Kima o		:
				$\omega = 10$	4.98			
		#lanad	<u> </u>					
Date	Clock time	Elapsed time (min)	Hydrometer reading		meter with te correction	Temp. (°C)	Soil in suspension (%)	Particl diamet (mm)
-8-90	0923	2.0	~20	* /	3	23.4	12.3	0.03
	0926	5.0	~16 >	¥ .	9	23. 2	8,5.	0.02
	0936	15.0	14		<u>7 (%) </u>	23.2	6.6	0.01
	0951	30.0	13		6	23.1	HLB 3-13-90 5.67.8	0.00
	1021	60.0	12		5	22.4	4,7.	0.00
	1331	250.00	9	.	2	22.0	1.9.	0.00
	0921	1,440.0	පි	1	j	21.8	0.9.	0.00

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE

FOLLOWED TO PRODUCE THE ABOVE DATA.

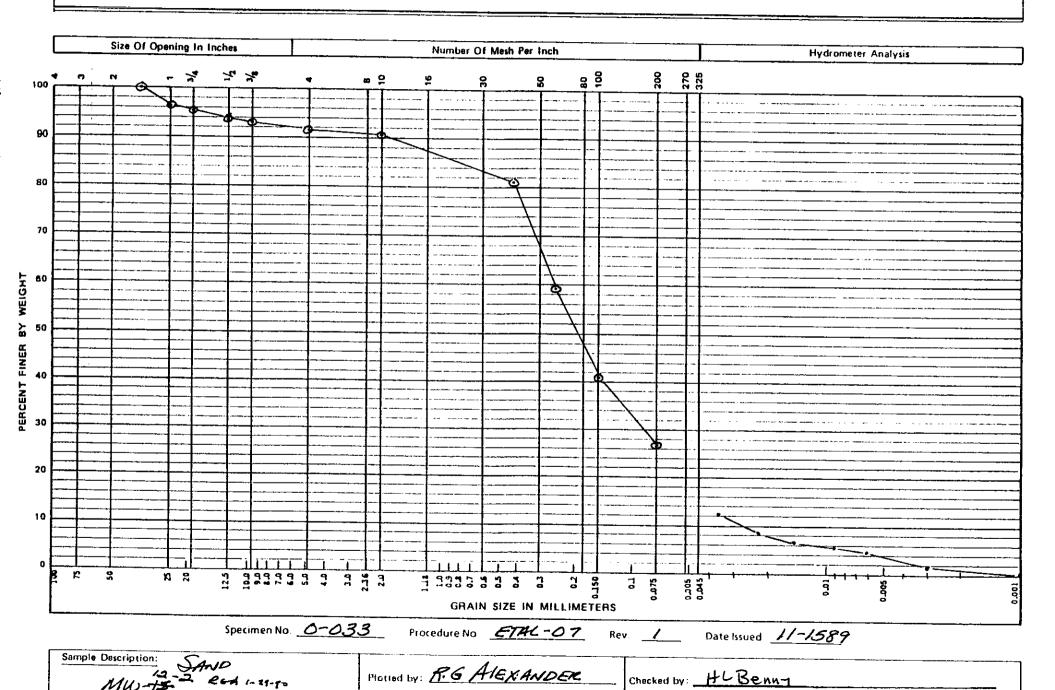
Checked By

Date 3-14-40

SPECIFIC GRAVITY OF SOILS DATA SHEET

Test	Operator R.G. Alexan	NDER		3-2-5	<u>30</u>	ł	
	EQUIPMENT ITEM	NO.		<u>D/</u>	ATE DUE		
Bala	ance	3304		3-2	5-90		
Ove	en Thermometer	0007		8-16	<u>- 90</u>		
The	rmometer	0002		2-9			
Pyc	nometer	2554		~//	<u> </u>]	
Wetti	ing Agent "Q" WATER						
, ,	DETERMINATION NO.		1		2		3
	Drying Container No.		N/A		/^	2	A
	Wt. Container + Oven Dry Soil, ± 0.	.01g	N/A ·		·		
	Wt. Container, ± 0.01g		N/A :		·	۸	
w,	Wt. Oven Dry Soil, g		40 .00		·		
	Pycnometer No.		2554				
	Wt. Pycnometer, g		135 :12		٠		
w,	Wt. Pycnometer + Wetting Agent, g		387 ·29		·		.—
W _b	Wt. Pycnometer + Wetting Agent +	· Soil, g	412 .3.1		٠		
	Temperature, T _x at W _b , *C		24.8 c·	•	•		
G _w	Specific Gravity of Wetting Agent at	T _x	1.00				_
G,	Specific Gravity of Soil at T _x		2.71				
G,	Specific Gravity of Soil at 20°C		2.10	1		7	_
	C W	· · · · · · · · · · · · · · · · · · ·			!		
G _t =	$= \frac{G_{\mathbf{w}^{\bullet}} Y_{\mathbf{w}^{\bullet}} W_{\mathbf{o}}}{W_{\mathbf{o}} + (W_{\mathbf{o}} - W_{\mathbf{b}})}$						
·	"o " ("a " 'b'						
Yw =	Unit Weight Of Water (g/cc)	·	•	. 100			
'G, =	K+G _t		Average Spe	citic Gravit	y At 20°C	ļ	<u>2</u> .
C valu	es found in ASTM D854-58, Table 1	Ĺ					
NOT	E G, = G, When Test Run at 20 °c						
<u></u>	c of a of which texture of a						
				0504700			
RAIN	EQUIRED DATA ARE ACCURATELY AN ED AND UTILIZED CALIBRATED TEST I	INSTRUMENTS AS INC	DROED. THE TEST OF	PROVEDT	EST PROCEDU	RES	
VERE	FOLLOWED TO PRODUCE THE ABOVE	E DATA.					

GRAIN SIZE ANALYSIS PLOT



Date: 1-31-90

Date: 1-29-90

W	Westingh Hanford	ouse Company
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CHAIN OF CUSTODY

•			
Company Contact: J.W. L.	ndberg	Telephone:	6.5005
Somple Collected by: R.D.M.	iller	Date: Inclusive da	Les Time: 1/4
Sample Locations:MW-12			
Ice Chest No.:n/a		Fleld Logbook	Page No.:
Remarks: Field Logland Not			
Method of Shipment: _qoit	vehicle-hand can	ry to J. Alexa	under 2101-11 lak
, ,	Sample Identifica		А.
UW-12-1, plaste bag		uw-12-12, 5/5	liner-b"
NW-12-2, " "		E without the common to the co	
MW-12-3, " "			<u> </u>
MW-12-4 " "			<u>-,</u>
MW-12-5, " "			
MW-12-4, "	· · · · · · · · · · · · · · · · · · ·	•	÷
luw-(2-7, " "			
MW-12-8, " "			
MW-12-9, "			
MW-12-10 "			
MW-12-11, 5/5 liner-6"			
CHAIN OF POSSESSION			
Relinquished by:	Received by:		Date/Time:
Comment of the Kand D. Aliles		JWLindberg ,	Jun 16901455
Relinquished by:	Received by:		Date/Time:
Relinquished by:	Received by: R4		/_/8-90/06/D Date/Time:
Relinquished by:	Received by:	-	Date/Time:
			

W	Westingh Hanford	ouse Company
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	SAMPLE A	unalysis R	EQUEST	
PART I: FIE	ELD SECTION CERCLA	1100-EM	-1. Groundwate	-Monitoring We
Collector:	Rand Miller o	ate Sample	id: Jan 13-16 1990	me: <u>NA</u> hours
Company (Contact JW Lindberg		Telephone (504)	376-5005
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED
MW-12-1	I plastic bag	Soil	Particle Size,	Moisture
MW-12-2	11	1/	11	И
MW-12=3	11	11	ı.	11
MN-12-4	'1	11	ıı	11
MW-12-5	11	1/	ti	r f
MX1-12-6	1)	11	H	11
MM-12-7	1)	1/	11	11
MW-12-8	1)	1/	11	11
MW-12-9	<u> </u>	11	11	11
MW-12-10	1)	11	П	11
MW-12-11	1 6" Split Spoon Liner	11	Partide Size,	Atterberg Lin
MW-12-12	/1	1)	Permeabilitu	
	mation Well tempor east side of th ndling and/or Storage	ary nui e Horni	nber MW-1. Rapids Landfil	2
PART II. 1	ABORATORY SECTION			
	Y	THIS	· · · · · · · · · · · · · · · · · · ·	Date
	rquired			
• indicate	Whether Sample is Soil, S ck of Page for Additional I			e Location.

	•
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-1 Date 1-13-90	Bldg. MW-12-2 Date 1-73-90
Released By Operational Health Physics	Released By Operational Health Physics
	Operational Health Phylics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-3 Date 1-13-9-6	Bldg. NW-12-4 Date 1-13-90
	Released By Operational Health Physics
Released By Operational Health Physics	Operational Health@hysics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
Ÿ.	
	<u> </u>
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-1Z-5 Date 1-13-90	Bldg. NW-12-6 Date 1-13-90
Released By	Released By Operational Health Physics
Operational Health Physics	Operational Health Physics
Remarks	Remarks
1	
54-3000-022 (09/88)	54-3000-022 (09/88)
The second secon	The second secon
RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-7 Date 1-15-90	Bldg. MW-12-8 pate /-(5-90
Released By Alachan and	Released By Manager
Operational Health Physics	Operational Health Physics /
Remarks	Remarks
1 Samolo	1 murch

54-3000-022 (09/88)

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No	.0-034	Cost Code/Work Order No. ED-332
Requested By: Org	. 80232	Person J. LINDBERG Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS		ETAL-07
HYDROMETER		ETAL-07 (IFRED)
MOLSTURE		ETAL- M
NA	NA	N/A
	•	
Remarks <u>FIELD SA</u> MW -14-3	MPLE	Received By: RG ALEXANDER Date 1-18-90
MW-121.3		Approved By: R.G ALEKANOER Date 1-29-90

					SIEVE ANAL	YSIS DAT	A SHI	EET		
		Sampl	e ID	0	034		Page		of <u>/</u>	
[Tes	sted	By	RG ALEXAN	IDER I	ate	1-29-9	70	
		Pr	oced	lure_4	5721-07 Re	v <u>/</u> I	Date Is	sued_//	1-15-89	
ļ ļ			PAT	TTOLES	יאס אנטייי יישאי	TED DATE ON IN	Τ Ο.	DATE D	TIE	
				nce	NT ITEM CAL	3304		3-26-	89	
ĺ			Ther	mome	ter	0006 N/a		2-6-9	70	
				NA		NID		N/A		
Sa	mpl	e Desc	ript	ion	SANO		- Si	eve Tir	ne <u>/O</u> (1	min)
				_	splitting	Y quartering			-	
	BEF	(B) ORE TI	EST `	WT. <u>4</u>	/// AFTER TE	ST WT.	<u>B-A</u> X	100 = 1	V/4 % LOSS	}
Sieve		Sieve Size		nple	Cumulative Wt.	% Retained			Cumulative :	% Pass
			Wei	ght	Retained (g)			ained	1 435	
_N/	A	2	433	3 <i>8.55</i>	Ø	<u>Ø</u>	- 5	<u> </u>	100	100
		1/2		ļ	Ø	Ø	9		100	100
		1		ļ	26.99	0.6	0.	6	99.4	99.4
		3/4			161.36	3. 7	3.	7	96.3	96.3
		1/2		<u> </u>	233.69	5,4	5.	4	94.6	94.6
		3/8			266.66	6.1	4.	1	93.9	93.9
		#4	'	<u> </u>	335.49	7.7	7.	7	92.3	92.3
		#10	433	8.55	388. /Z	8.9	8.	9	91-1	96.1
		#40	14	1,53	15.10	10.7	10.	7	89.3	81.4
		# 60	ļ 	<u></u>	57.18	40.4	40	.4	. 59.4	54.3
		# 100		ļ	95.57	67.5	67	7.5	<i>3</i> 2,5	29.6
. 4		* ZOO	<u> </u>	b	121.09	85.6	89	5.6	14.4	13.2
		Finess !	Kođu!	les (FM	() <u>N/A</u> (See ASTM C 1	36-83, :	Section !	3.2)	
МАТ	ERL	ALS FI	VER	THAN	NO. 200 SIE	VE BY WASE	ING	_		
C=Pe	rcent	tage of	Mater	ial Pas	ssing a 200 Siev			Remark WASH		PARING
D=Ori	igina	l Dry We	eight	of San	nple) <u>41.53 _g</u>	-	5MAL	L FIELD	<u> LAPINO</u>
E=Dr;	y Wel	_	_		r Washing/Sleve	121.09 g	-	SAMP		
	 =)/D> X						
					URATELY AND AINED AND U					ST
		ecked							1-31-90	-

A-8409-204(2-67)

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. <u>2006</u> CALIBRATION DUE DATE <u>2-6-90</u>

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WI.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-034	5011,30	4923.27	584.72	4426,58	4338.55	2.03
<u> </u>						
						/_
						<u> </u>
						ļ
		!				
			 			
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<u> </u>		\				
	<u> </u>		<u> </u>			
						<u> </u>
			\times			
						
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						$\overline{}$
			·			

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 1-29-90

	ſ	Total D. LL	(Pani	Date	3-7-9	<u>ک</u>		
	1	Procedure	•	Date Issued				
•		£ 01 11 DE			CALIBRA	ATION		
	ł		MENTITEM	NO. 1000	<u>DUE DA</u>			
	Ì	Balance		3304	3 -2	5-90		
	į	Thermometer	er/Thermocouple	000Z	2-9	7-91		
Specific	ں gravity of	Sample	2.71			•		
			(%)	 		DISTURE C		
		ction Factor		Wt. Container +	-			•
			•	Wt. Container +				-
	<u>w</u>	EIGHT OF SAM	PLE HUB 2-25-90 LO 2-15-90	Wt. Container _		·NA	(0	3)
Wt. Con	itainer + Ś	oil	10 (g)	Water Content_	0	UA	(%)
Wt. Con	ntainer		(g)		DESA	A DVC		
		•			KEIVI	<u>ARKS</u>		
Wt. Soil			103.42 (g)					
Wt. Soil	•			Tube B				
	<u>СОМ</u>	POSITE CORRE	CTION					
1st Read	<u>COM</u> ding	POSITE CORRE	CTION 24.Z °c	Tybe B W=113.52				·
1st Reac	<u>COM</u> ding	POSITE CORRE	CTION					
1st Read	<u>COM</u> ding	POSITE CORRE	CTION 24.Z °c					
1st Read	<u>COM</u> ding	POSITE CORRE	CTION 24.Z °c					
1st Reac	<u>COM</u> ding	POSITE CORRE	CTION 24.Z °c		th	Temp. (°C)	Soil in suspension (%)	Parti
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	COM ding ading Clock time	POSITE CORRE 7 at 10.4 at	CTION 24.Z °C NA °C	W=113.52	th	Temp.	Soil in suspension	Parti diame (mr
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	COM ding ading Clock time	POSITE CORRE 7 at AU A at Elapsed time (min)	CTION 24.2 °C NA °C Hydrometer reading	W=113.52 Hydrometer wi composite correct	th	Temp.	Soil in suspension (%)	Parti diame (mn
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	Clock time	POSITE CORRE 7 at AUA at Elapsed time (min) 2.0	CTION 24.7°C NA°C Hydrometer reading	Hydrometer wi composite correct	th tion	Temp. (°C)	Soil in suspension (%)	Partidiame (mn
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	Clock time	POSITE CORRE 7 at AUA at Elapsed time (min) 2.0 5.0	CTION 24.Z °C NA °C Hydrometer reading // //	Hydrometer wi composite correct	th tion	Temp. (°C) 24.7 24.4	Soil in suspension (%) 3.5.	Parti diame (mn
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	Clock time 0704 0707 0717	POSITE CORRE 7 at AUA at Elapsed time (min) 2.0 5.0	CTION 24.Z °C NA °C Hydrometer reading // // // // // 8	Hydrometer wis composite correct 4 3 1 0	th tion	Temp. (°C) 24.7 24.4 23.8 23.8	Soil in suspension (%) 3.5. 2.6. 0.9.	Parti diame (mn
1st Read 2nd 2nd Read 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd 2nd	Clock time 0704 0707 0717 0732	POSITE CORRE 7 at AU A at Elapsed time (min) 2.0 5.0 15.0 30.0	CTION 24.Z °C NA °C Hydrometer reading // // // // // // // // // // // // /	Hydrometer wis composite correct Hydrom	th tion	Temp. (°C) 24.7 24.4 23.8 23.8 NA	Soil in suspension (%) 3.5. 2.6. 0.9.	Partidiame (mn
1st Read 2nd Read	COM ding ading Clock time 0704 0707 0717 0732 0602	POSITE CORRE 7 at AUA at Elapsed time (min) 2.0 5.0 15.0 30.0 60.0	CTION 24.Z °C NA °C Hydrometer reading // // // // // // // // // // // // /	Hydrometer wis composite correct 4 3 1 0	th tion	Temp. (°C) 24.7 24.4 23.8 23.8	Soil in suspension (%) 3.5. 2.6. 0.9.	Partidiame (mn 0.03

Heyand-

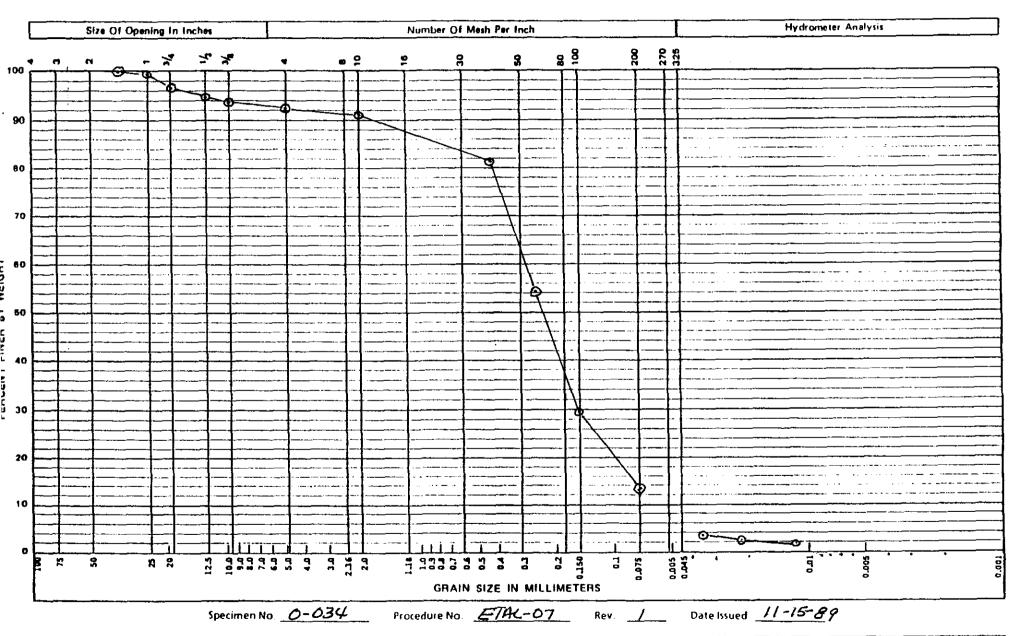
Checked By

HYDROMETER ANALYSIS DATA SHEET

SPECIFIC GRAVITY OF SOILS DATA SHEET

	Spe	ecimen/Sample No. <u>0-03</u>	4	Pa	ge <u>1</u> of <u>1</u>	
	Test	Operator R.G. Ale)	(ANDER		26-90	
	• 	EQUIPMENT ITEM	<u>, NO.</u>		DATE DUE	
	Bal	ance	3304		3-25-30	[
	_ <u>0v</u>	en Thermometer	0007		8-16-90	
		ermometer	<u>600 2</u>		2-9-91	
	Pyc	nometer	2554		~/A	
	Wett	ing Agent "Q" WATER				
		DETERMINATION NO.		1	2	3
	ļ 	Drying Container No.		NA	N/A	N/A
		Wt. Container + Oven Dry Soil, ±	0.01g	~/A ·		
	! !	Wt. Container, ± 0.01g		N/A	· 	Λ
*	w.	Wt. Oven Dry Soil, g		40.00		·-
		Pycnometer No.		2554		
		Wt. Pycnometer, g		135 . 22	·	·_
	W _a	Wt. Pycnometer + Wetting Agent	t, g	387 · <u>07</u>	·	
1	W _b	Wt. Pycnometer + Wetting Agent	t + Soil, g	412 . <u>3.3</u>	·	
	 	Temperature, T _x at W _b , °C		25.6 C ·		
	G _w	Specific Gravity of Wetting Agent	at T _x	1.00		
	G _t	Specific Gravity of Soil at T _x		2.11		
	G,	Specific Gravity of Soil at 20°C		<u>z.71</u>	<u> </u>	<u> </u>
	G _t =	$\frac{G_{w^*}V_{w^*}W_0}{W_0 + (W_0 - W_0)}$				
	*G _s =			Average Spe	cific Gravity At 20°c	2.7
		es found in ASTM D854-58, Table 1 $ \underline{E} G_s = G_t \text{ When Test Run at 20 °c} $				
	TRAIN	QUIRED DATA ARE ACCURATELY A ED AND UTILIZED CALIBRATED TES FOLLOWED TO PRODUCE THE ABO	TINSTRUMENTS AS IN			
	Check	ed By HCBenny		Da	te 3-1-90	

GRAIN SIZE ANALYSIS PLOT



Sample Description: 5AND

MW-12-3

Plotted by: R. G. ALEXANDER
Date: 1-29-90

Chacked by: HLBenny

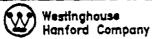
Date: 1-31-90

W	Westingh	ouse Company
(H)	Hanford	Company

C

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•	CHAIN OF CU	STODY	
Company Contact: J. W. (indberg	Telephone:	6.5005
Sample Collected by: R.D.I	4.ller	_ Date: Inclusive d	ales Time: h/a
Sample Locations: <u>NW-</u>	12	· · · · · · · · · · · · · · · · · · ·	
ice Chest No.:n/a		Fleld Logboo	k Page No.:
Remarks: Field Log book N	5 WHK-N-306-	3	
Method of Shipment: _qoit	vehicle-hand a	arry to J. Alex	lander 2101-11 lab
	Sample Identi	fication	
MW-12-1, plaste bag		MW-12-12, 5/5	s liner-b"
MW-12-2 " "			
MW-12-3, " "			
MW-12-4 11 -			
MW-12-5, " "			<u>,, , , , , , , , , , , , , , , , , , ,</u>
MW-12-4 4 "			#
Mw-12-7 " "			
MW-12-8, " "		· · · · · · · · · · · · · · · · · · ·	
MW-12-9, "			
MW-12-10, "	**** <u> </u>		
MW-12-11, 5/5 liner-6"			
CHAIN OF POSSESSION			
Relinquished by:	Received by:		Date/Time:
June Amy Paul Hill	or You mile	ng JWL indberg	Jan 16901455
Relinquished by:	Received by:)	Date/Time:
Julindberg Wondlerg	R.G Alexan	YOER	1-18-90/0610
Relinquished by:	Received by: $\cal R$	to Alepand	Date/Time:
Relinquished by:	Received by:		Date/Time:
	·	***************************************	



		NALYSIS RI		
PART I: FIEL	D SECTION CERCLA	100-EM	-1. Groundwate	-Monitoringh
Collector:	Rand Miller on	ate Sample	d: <u>Jan 13-16, 1990</u> T	irne: <u>NA</u> hour
Company C	ontact <u>Jw Lindberg</u>		Telephone (504)	376-5005
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	EQUESTED
MW-12-1	1 plastic bag	Soil	Particle Size,	Moisture
MW-12-2	11	"	11	Ч
NW-12=3	11	1)	- 11	11
MM-12-4	11	11	и	11
MW-12-5	11	11	11	ıı .
NW-12-6	11	11	(1	(f
14-12-7	11	.,	11	11
MM-12-8	<u> </u>	11	1)	
MW-12-9	11	11	11	11
1W-12-19	1)	11	и	(1)
NW-12-11	1 6" Split Spoon Liner	11	Particle Size,	Atterberg Li
MW-12-12	<u> </u>	1)	Permeabilit	
	nation Well temporal east side of the adding and/or Storage	ary nu e Horni	mber MW-1 Papids Landfi	7
	ABORATORY SECTION	Tiat -		Dete
-	, 	[] [])	nate
unalysis Re	quired			

Indicate Whether Sample is Soil, Sludge, Water, Etc.

Use Back of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-1 Date 1-13-90	Bldg. MW-12-2 Date 1-73-90
Released By Operational Health Physics	Released By
	Operational Health Phylics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-3 Date 1-13-96	Bldg. NW-12-4 Date 1-13-90
Released By Operational Health Physics	Released By Operational Health@hysics
Remarks	Remarks
Nemasks -	
54-3000-022 (09/88)	54-3000-022 (09/88)
<u> </u>	
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-5 Date 1-13-90	Bldg. NW-12-6 Date 1-13-90
Operational Health Physics	Released By Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-7 Date 1-15-90	Bldg. MW-17-8 pate 1-(5-90
Released By Magaland	Released By Malaud
Operational Health Physics	Operational Health Physics i
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
34-3000-022 (03/86)	
	•

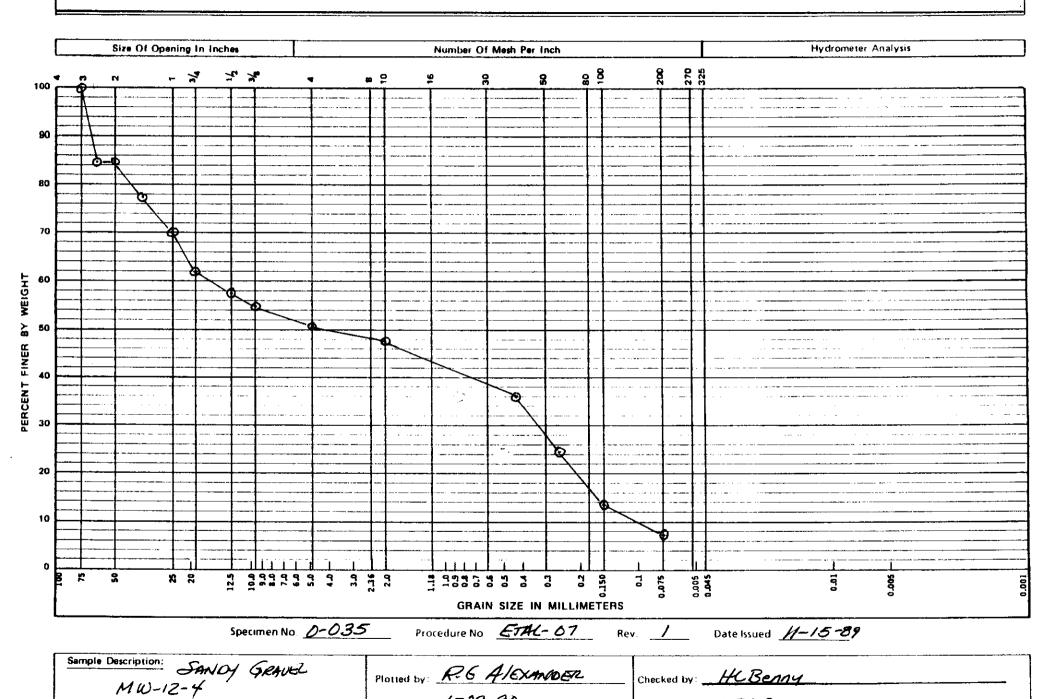
TEST REQUEST FORM

Cost Code/Work Order No. ED 332
Person J. LINOBECG Date 1-29-90
Test Lab Information (Instruction Used)
ETAL-67
ETAL-07 (IF RED)
ETAL-14
N/A
Received By: R.G. Alexander Date 1-18-10 Approved By: R.G. Alexander Date 1-29-90

								
				SIEVE ANAI	LYSIS DAT			
i			le ID			Page/		
		Te	sted By 🕹	RG. Alexan	VDEK I)ate	0	
		Pr	ocedure <u>4</u>	7746-67 Re	· V/	Date Issued <u>/</u>	1-15-89	
			EQUIPME Balance Thermome	ter	Libration n 3304 0006 N/A	NO. DATE D 3-25- 2-6- 2/A	90	
St	ampl	e Des	eription	SANOY GRA	WEL	- Sieve Tir	ne <u>10</u> (r	min)
		reduce		splitting		gkpotkp	lle	
	BEF	(B) ORE T	est wt. <u>//</u>	AFTER TE	ST WT. A/A	$\frac{B-A}{B}X \ 100 = 2$	1/2 % LOSS	
Siev Nun	e ID aber	Sieve Size	Sample Weight	Cumulative Wt Retained (g)	. % Retained	Cumulative %	Cumulative 2	% Pass
N/A	 (21/2	4319.06	663.44 663.44	15.4 15.4	15.4	84.6 84.6	84.4
<i></i>		11/2		965.92	22.4	22.4	77.6	84.6
	·	1 1 2		1298.72		30.1		77.6
-		3/4		1650,26	30.1		49.9	69.9
		1/2			38.2	38.2	61.8	41.8
		3/8		1830.83	42.4	42.4	57.4	57.6
		#4 #4		1961.08	45.4	45.4	54.6	54.6
		<u> </u>	<u> </u>	2130.42	49.3	49.3	50.7	50.7
		410	4319.06	2265.35	52.5	52.5	47.5	47.5
		#40	149.07	36.08	24.2	24.2	75.8	360
_		#60	_	73.27	49.2	49.2	50.8	24,1
$-\downarrow$		#1∞		106.31	71.3	71.3	28.7	13.6
:7		#200	<u> </u>	126.47	84,8	848	15.2	7.2.
		Finess	Modules (FM	() <u>N/A</u>	(See ASTM C 1	36-83, Section	B.2)	
MA	TERL	ALS FI	NER THAN	NO. 200 SIE	VE BY WASE			
D=Or	rigina	l Dry W	eight of San	r Washing/Sievo	149.07 m	Remark WASH SMA SAM	FINE GRA	40 MG
	OP	L DAT	A ARE ACC	URATELY ANI AINED AND U		LY RECORDED ATED INSTRU		ST

A-6400-204(2-87)

GRAIN SIZE ANALYSIS PLOT



1-29-90

Date: 1~31-90

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO.

THERMOMETER NO. 0006 CALIBRATION DUE DATE 2-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-035	4991.80	4908.45	589,39	4402.41	4319.06	1.93
				/		
	· · · · · · · · · · · · · · · · · · ·					
		/				
				,		
				·		
				:		
/	1					

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 1-29-90

W	Westingh Hanford	ouse Comp	UND
	namora	COLLIP	Airi

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SAMPLE ANALYSIS REQUEST

			1474.	
PART I: FIE	LD SECTION CERCLA	1100-EM-	1, Groundwater Monitoring	llel
Collector:	Rand Miller	, _Date Sampled:	: Jan 13-16 1990 Time: NA hou	11.2
Company C	ontact JW Lindber	9	Telephone (504) 376-5005	_
SAMPLE	NUMBER & TYPE OF SAMPLE	TYPE OF	ANALYSIS REQUESTED	

SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED
MW-12-1	I plastic bag	Soil	Partide Size,	Moisture
MW-12-2	11	"	- 11	
MW-12=3	11	11	11	11
MN-12-4	4	П	н	it
MW-12-5		1/	ţi	II
MW-12-6	1)	11	н	1 f
MN-12-7	•)	()	11	11
MW-12-8	1)	ı)	11	11
MW-12-9	11	+1	11	11
MW-12-10	11	11	- 11	11
MW-12-11	1 6" Split Spoon Liner	11	Partide Size,	Atterberg Lin
MW-12-12	, n	1}	Permeabilitu	

Field Information Well	temporary number 1	MW-12
on the east side	of the Horn Rapids L	and +111.
Special Handling and/or St	orage	
PART II: LABORATORY SECTI	ON	
Received by	Title	Date
Analysis Required		
	is Sall Studen Water Fin	

Indicate Whether Sample is Soil, Sludge, Water, Etc.

Use Back of Page for Additional Information Relative to Sample Location.

Westinghouse Hanford Company
Company Contact: .

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Qį,

CHAIN OF CUSTODY

Company Contact: J. W. Lindberg	Telephone: 6.5005
Sample Collected by R.D.Miller	_ Date: Inclusive dates _ Time: n/a
Sample Locations: MW-12	. '
Ice Chest No.:	Fleld Logbook Page No.:
Romarks: Field Log book No# WHK-N-306-3	3
Method of Shipment: goit vehicle-hand a	
Sample Identif	
UW-12-1, plaste long	MW-12-12, S/5 liner-6"
MW-12- 2, " "	
MW-12-3, " "	
mw-12-4 " "	
MW-12-5, "	
MW-12-6 "	j
Mw-12-7, ""	
MW-12-8, " "	
MW-12-9, "	
MW-12-10, "	
MW-12-11, 5/5 liner-6"	
CHAIN OF POSSESSION	
Relinquished by: Relinquished by: Relinquished by: Relinquished by: Relinquished by: Received by:	Date/Time: Jan 16901455 Date/Time: 1-18-90/0610 Date/Time:
Relinquished by: Received by:	Date/Time:

RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-1 Date 1-13-9-0	Bidg. MW-12-2 Date 1-13-90
Released By Operational Health Physics	Released By Operational Health Physics
Remarks	Remarks
	walligits
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-3 Date 1-13-96	Bldg. MW-12-4 Date 1-13-90
Released ByOperational Health Physics	Released By Operational Health@hysics
<u> </u>	· • • • • • • • • • • • • • • • • • • •
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-5 Date 1-13-90	Bldg. MW-12-6 Date 1-13-90
Released By	Released By Operational Health Physics
Operational Health Physics Remarks	Operational Health Physics Remarks
Netilarks	nemorks
54-3000-022 (09/88)	54-3000-022 (09/88)
	The second secon
RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-7 Date 1-15-90	Bldg. MW-12-8 pate /-(5-90
Released By	Released By Operational Health Physics
	• •
111	Remarks
- Dample	54-3000-022 (09/88)
54-3000-022 (09/88)	J4-3000-022 (03/do)

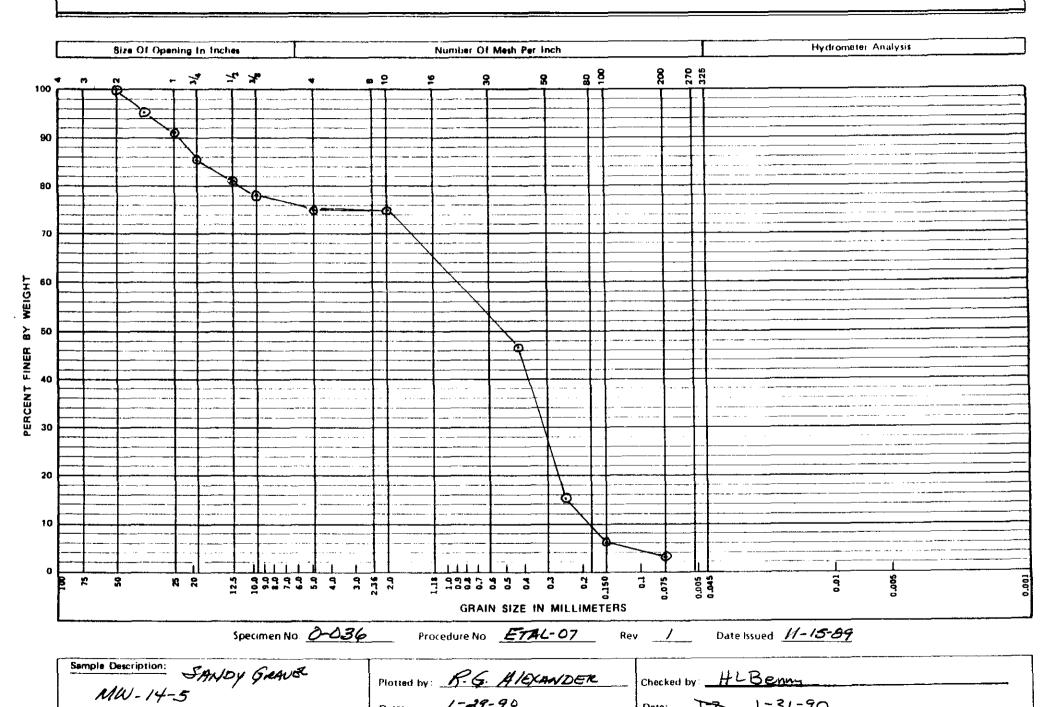
TEST REQUEST FORM

Sample/Specimen No	.0-036	Cost Code/Work Order No. 60332
Requested By: Org	.80232	Person J. GND BGRG Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS		ETAL-07
HyperMETEL	/	ETAL-07 (IF RED)
Masnes	1	E#AL-14
N/A	N/A	N/A
	•	
Remarks <u>FIELD</u> SA. <u>MW-12-5</u>	MACE	Received By: R.G. Alexander Date 1-18-90
		Approved By: R.G. A/OXAMOGR Date 1-29-9

			SIEVE ANAI	YSIS DAT	A SHEET		
	Sampl	e ID_ <i>O-c</i>			Page/	o# <u>/</u>	
	Te	sted By /	P.G. Alexani	DETL I	Date /- 29-9	20	
	Pr	ocedure_	<i>⊆7111-67</i> Re	v <u>'</u>	Date Issued_	11-15-89	
	ļ					ļ	
		Balance	NT ITEM CAL	3304	NO. DATE D 3-25-		
		Thermome		000 G	2-6-		
Samp	le Desc	eription	SANDY GRAVE	•	— Sieve Tir	ne 10 (min)
		iby 🔀	splitting)		stockp	ile	
BEF	(B) ORE TI	est wt.	AFTER TE	ST WT.	$\frac{B}{B-V}$ X 100 = \sqrt{A}	//4 % LOSS	
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative :	% Pass
Number	Size	Weight	Retained (g)		Retained	Pass	
N/A	2	4839.71	4	ø	Ø	100	100
	11/2		218.49	4.5	4.5	95.5	95.5
	l		428.69	8.9	8.9	9/./	91.1
	8/4		685.82	14.2	14.2	85.8	85.8
	1/2		926-17	/9./	19.1	80.9	80.9
	3/8		1060.28	21.9	21.9	78.1	78-1
	#4	*	1201.32	24.8	24.8	75.2	75.2
	#10	4839.71	1224.41	25,3	25.3	74.7	74.7
	#40	124.62	47.17	37.9	37.9	62.1	46.4
	#60	ļ !	99.75	80.0	80.0	20.0	14.9
	#100		114.27	91.7	91-7	8.3	4.2
Υ	#700	<u> </u>	119.64	96.0	96.0	4.0	3.0
	Finess l	Modules (FM	r) <u> </u>	See ASTM C 1	36-83, Section	3.2)	
			NO. 200 SIE				
		Material Pas eight of San	ssing a 200 Siev	e <u>4.5 %</u> 1 <u>24.62 m</u>	Remark	FINE GR	ADMIT
	_	_	apie r Washing/Sieve		SMAL	L FIELD	
		(D-E)/D> X		111-07 g	- SAM	pce	
			URATELY AND				ST
OF	ERATO	R WAS TR By <u>HL</u> E	AINED AND US	SED CALIBR.		MENTS 1-31-90	

A-8400-204(2-67)

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. 0006 CALIBRATION DUE DATE 2-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-036	5528.74	5428.19	588.48	4940.26	4839.71	2.08
		/				
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			i		*··*·	
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/	· · · · · · · · · · · · · · · · · · ·					$\overline{}$

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. Alexander

DATE 1-29-90

W	Weslingh Hanford	ouse Company
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CHAIN OF CUSTODY

Sample Collected by. R.D. Miller Sample Locations: NW-12 Ice Chest No.: Nemarks: Field Log book Not which - No 306-3 Method of Shipment: Gait vehicle - hand carry to J. Alexander 2101-11 let Sample Identification NW-12-1 plaste larg NW-12-2 " NW-12-2 " NW-12-4 " NW-12-6 " NW-12-6 " NW-12-6 " NW-12-1 S/2 liner-6" CHAIN OF POSSESSION Relinquished by: Relinquished by: Relinquished by: Received by: Received by: Refered by: Refered by: Received by:	Company Contact: J. W. Cadle	cm Telephone: 6.5005
Remarks: Field Logbook Page No.: Remarks: Field Logbook Not which - Not - 306-3 Method of Shipment:	Sample Collected by R.D.Miller	Date: Inclusive dates Time: 1/2
Remarks: Field Log book Not which - hand carry to J. Alexander 2101-M Let Sample Identification MW-12-1, plante long MW-12-2, " MW-12-3, " MW-12-4, " MW-12-6, " MW-12-7, " MW-12-1, s/s liner-6" CHAIN OF POSSESSION Relinquished by: Relinquished by: Relinquished by: Received by: Recei	Sample Locations: MW-12	•
Method of Shipment:qat vehicle-hand carry to J. Alexander 2101-M let Sample Identification MW-12-1 plaste bug MW-12-12, 5/5 liner-6" MW-12-2 " " MW-12-3 " " MW-12-4 " " MW-12-6 " " MW-12-6 " " MW-12-10 " " MW-12-10 " " MW-12-10 " " MW-12-10 " " MW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by:	Ice Chest No.:n/a	Field Logbook Page No.:
Sample Identification MW-12-1 plaste bag MW-12-12, 5/5 liner-6" MW-12-2 " " MW-12-3 " " MW-12-4 " " MW-12-6 " " MW-12-6 " " MW-12-7 " " MW-12-10 " MW-12-10 " " MW-12-10 " " MW-12-10 " " MW-12-10	Remarks: Field Log book Not we	K-N-306-3
Sample Identification MW-12-1 plaste bag MW-12-12, 5/5 liner-6" MW-12-2 " " MW-12-3 " " MW-12-4 " " MW-12-6 " " MW-12-6 " " MW-12-7 " " MW-12-10 " MW-12-10 " " MW-12-10 " " MW-12-10 " " MW-12-10		
MW-12-1, plaste long MW-12-12, S/S liner-6" MW-12-3, "" MW-12-4 " MW-12-6 "" MW-12-6 "" MW-12-7 "" MW-12-8 "" MW-12-10 "" MW-12-10 "" MW-12-10 "" MW-12-11, S/S liner-6" CHAIN OF POSSESSION Relinquished by: Received by: Received by: MW-12-10 " MW-12-10 " MW-12-10 " MW-12-10 " MW-12-10 " MW-12-10 "" MW-12-10 " MW-12-10	Method of Shipment: qoit vehi	
MW-12-2 " " MW-12-4 " " MW-12-7 " " MW-12-9 " " MW-12-10 " " MW-12-10 " " MW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by: Received by: Received by: Refered by: MW-12-10 Parallel Time: MW-12-10 P		
MW-12-3 "" MW-12-6 "" MW-12-6 "" MW-12-7 "" MW-12-8 "" MW-12-10 "" MW-12-10 "" CHAIN OF POSSESSION Relinquished by: Relinquished	•	MW-12-12, 5/5 liner-6
MW-12-6 MW-12-6 MW-12-6 MW-12-7 MW-12-8 MW-12-9 MW-12-10 MW	,	
MW-12-6 " MW-12-6 " MW-12-7 " MW-12-8 " MW-12-10 " MW-12-10 " CHAIN OF POSSESSION Relinquished by: Relinquished by: Relinquished by: Relinquished by: Relinquished by: Relinquished by: Received by: Refered by: Date/Time: 1-18-90/06/0 Date/Time:	MW-12-3, "	
MW-12-4 " MW-12-8 " MW-12-9 " MW-12-10 " AW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by: Received by: Relinquished by: Refered	MW-12-4 1.	
MW-12-7 " MW-12-8 " MW-12-9 " MW-12-10 " AW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by: Received by: Refered by:	MW-12-5 " "	
MW-12-9 " MW-12-10, " MW-12-10, " MW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by: Resceived by: Relinquished by: Resceived by: Refered by:	MW-12-4 4 "	÷
MW-12-9 " MW-12-10 " MW-12-11, 5/5 liver-6" CHAIN OF POSSESSION Relinquished by: Received by: Relinquished by: Relinquished by: Refered by:		
MW-12-10, " CHAIN OF POSSESSION Relinquished by: Received by: Relinquished by: Relinquished by: Reference		
MW-12-10, 11 MW-12-11, 5/5 liner-6" CHAIN OF POSSESSION Relinquished by: Received by: Relinquished by: Relinquished by: Relinquished by: Received by		
CHAIN OF POSSESSION Relinquished by: Received by: Received by: Relinquished by: Refered by:		
Received by: Re		
Relinquished by: Relinquished by: Received	CHAIN OF POSSESSION	
Relinquished by: Referred by:	Relinquished by:	ecelved by: \(\) Date/Time:
Relinquished by: Date/Time: Date/Time: Colored by: Received by: Reserved	January Row O Niler	10 Lindlers JWLindberg Jan 16901455
Relinquished by: Received by: R4 Alefund Date/Time:	Relinquished by:	
	Julindberg Woulding	R.G ALEXANDER 1-18-90/0610
	Relinquished by:	eceived by: R4 Alexand Date/Time:
Relinquished by: Received by: Date/Time:	Relinquished by:	eceived by: Date/Time:

W	Westingh Hanford	ouse Company
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	SAMPLE ANALYSIS REQUEST			
PART I: FIE	ELD SECTION CERCLA	1100-EM	-1. Groundwate	Monitoringle
Collector: _	Rand Miller on	cte Sample	d: <u>Jan 13-16, 1990</u> T	ime: <u>NA</u> hours
Company (Contact JW Lindberg		Telephone (()	376-5005
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RI	EQUESTED
MW-12-1	I plastic bag	Soil	ParticleSize	Moisture
MW-12-2		"	11	И
MW-12=3	11	+1		11
MN-12-4	11	11	"	- 11
MW-12-5		11	u .	11
MW-12-6	1)	11	11	14
MW-12-7	1)	17	11	//
MW-12-8	11	ıı.	1)	11
MW-12-9	11	+1	11	11
MW/_D-ID	1)	11	и	11
MW-12-11	1 6" Split SpoonLiner	11	Partide Size	Atterberg Lin
MW-12-12		1)	Permeabilit	
Field Information Well temporary number MW-12 on the east side of the HornRapids Landfill. Special Handling and/or Storage				
PART II:	PART II: LABORATORY SECTION			
Received b	Υ	Title)	Date
Analysis Re	equired			
• • • • • • • • • • • • • • • • • • • •				

indicate Whether Sample is Soil, Sludge, Water, Etc.

Use Back of Page for Additional information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
81dg. MW-12-1 Date 1-13-90	Bldg. MW-12-2 Date 1-73-90
Released By Operational Health Physics	
Operational Health Physics	Released By Operational Health Phylics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
Service of the servic	A second
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-3 Date 1-13-96	8idg. NW-12-4 Date 1-13-90
	Released By Operational Health Physics
Released By Operational Health Physics	Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
8ldg. MW-1Z-5 Date 1-13-90	Bldg. NW-12-6 Date 1-13-90
Released ByOperational Health Physics	Released By Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
***	The second secon
RADIATION RELEASE	RADIATION RELEASE
Bidg. MW-12-7 Date 1-15-90	Bldg. MW-17-8 pate 1-15-90
Released By Masser	Released By Manager By Manage
Operational Health Physics	Operational Health Physics
Remarks	Remarks
- I Samalo	Mulle

54-3000-022 (09/88)

54-3000-022 (09/88)

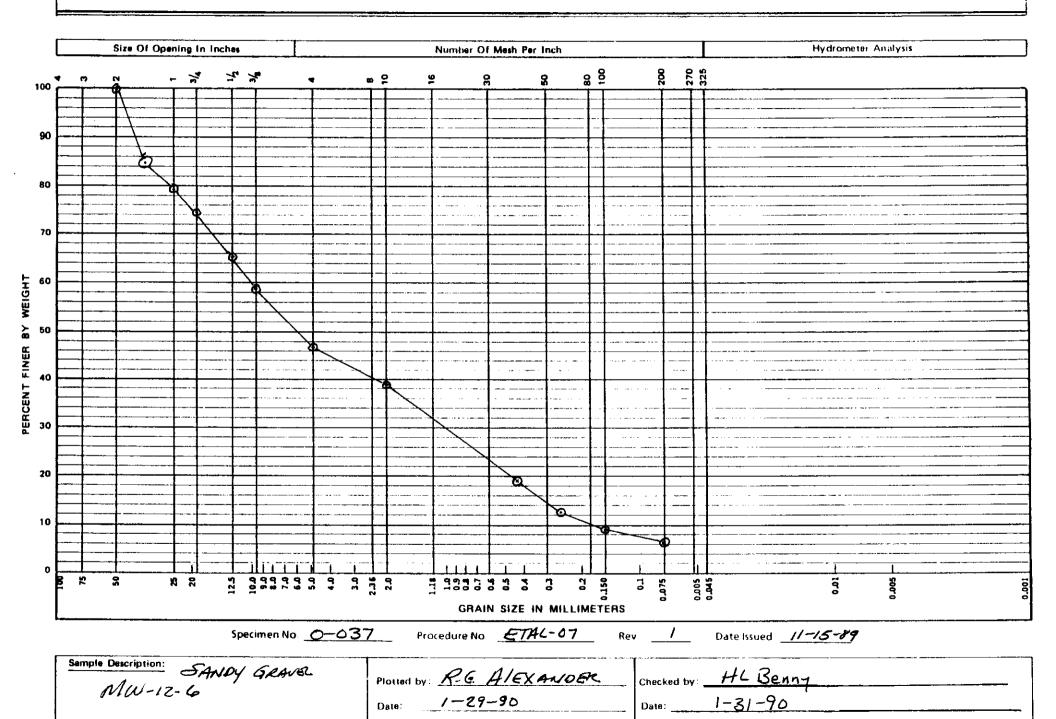
TEST REQUEST FORM

Sample/Specimen No	.0-037	Cost Code/Work Order No. ED 332
Requested By: Org	80232	Person J. Lindserg Date 1-29-50
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
Sieve ANALYSIS		ETAL- 07
HUDBONGTER		ETAL-OI (IF RED)
MOISTURE		ETAL-14
N/A	_ A\u	AlA
	•	
Remarks FIELD SI	i Inde	Received By: R.G. Alexander Date 1-18-90
MW-12-4		Approved By: RG A (Examer Date 1-29-9

SIEVE ANALYSIS DATA SHEET							
	Sampl	le ID <u>O</u>	037		Page		
	Te	sted By f	26 Alexan	der i)ate <u> </u>	90	
	Pr	arithann	ETAL- 07 Re	vi 1 ,	D.A. T	1-15-99	
				<u> </u>	Date Issued	1.001	
		EQUIPME	NT ITEM CAL	IBRATION 1			
		Balance		3304	3-76		
	İ	Thermome N/∆		0006 N/A	2-6- N/A	-30	
Samp	le Desc	eription_	SANDY GRA	WEL	— Sieve Tir	me <u>lo</u> (n	nin)
	reduce	d by 🕅 :	aplitting (q uartering	_ □ stockp	lie	
, DDF	(B)	nom zem N/	AFTER TE	(A)	B-A v 100 - 1	N/A & TACC	
BEF	ORE 1.	C21 M1.77	AFIER 1E.	51 W1. 1911	B X 100 = 1		
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative %	% Pass
Number	Size	Weight	Retained (g)		Retained	Pass	
N/A	2	4359.81	Ø	Ø	Ø	100	100
	1/2		674.27	15.5	15.5	84.5	84.5
	1		891.07	20.4	20.4	79.6	79.6
	3/4		1117.56	25.6	25.6	74.4	74.4
	1/2		1510.32	34.6	34.6	65.4	65.4
	3/8		1796.81	41.2	41.2	58.8	58.8
	#4	1	2318.78	53.2	53.2	46.8	44.8
	#10	4359.81	2667.52	61.2	61-2	38.8	38.8
	#40	147.15	75.76	51.5	51.5	48.5	18.8
	+60	<u> </u>	100.56	Le8.3	68.3	. 31.7	12.3
	#/00		113.26	77.0	77.0	23.0	8.9
7	#200	†	123.41	83.9	83.9	16.1	4.2
	Finess Modules (FM) MA (See ASTM C 136-83, Section 8.2)						
MATERIALS FINER THAN NO. 200 SIEVE BY WASHING							
C=Percentage of Material Passing a 200 Sieve 16.1 % Remarks							
D=Origina	D=Original Dry Weight of Sample M7.15 g WASH FINE GRADING Shau Field				JING		
E=Dry We	E=Dry Weight of Sample After Washing/Sleve 43.41g SAMPLE						
	$C = \langle (D-E)/D \rangle \times 100$						
ΙΛ	L DATA	A ARE ACC	URATELY AND	COMPLETE	LY RECORDED	THE TES	T
)	OPERATOR WAS TRAINED AND USED CALIBRATED INSTRUMENTS						
Ch	recked	By HC	Denny			1-31-90	
A-6400-204(Z-87)							

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. <u>ETW-14</u> REV. NO. <u>Ø</u>

THERMOMETER NO. <u>0006</u> CALIBRATION DUE DATE <u>2-6-90</u>

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-037	5068.00	4937.87	578.06	4484.94	4359.81	2.87
				/	· · · · · · · · · · · · · · · · · · ·	
					· · · · · · · · · · · · · · · · · · ·	
						· · · · ·
			X			
						
· · · · · · · · · · · · · · · · · · ·						
					· · · · · · · · · · · · · · · · · · ·	
	_					

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. ALEXANDER

DATE 1-29-90

(34)	Westingh	ouse Company
E	Hanford	Company

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CHAIN OF CUSTODY

Company Contact: J. W. Cine	lbers T-	onhama: 10:5005
	•	
Sample Collected by: R.D.M.I	Date: In	clusive dates Time: 1/6
Sample Locations: <u>MW-12</u>		
Ice Chest No.:n/a	Field	Logbook Page No.:
Remarks: Field Log book Not 1	UHC-N-306-3	
Method of Shipment: 40th ve		J. Alexander 2101-11 lab
	Sample Identification	
MW-12-1 plastic bag	MW-12-	12, 5/5 liner-6"
MW-12-2 " "		
MW-12-3, " "		<u> </u>
MW-12-4 11 "		
MW-12-5 " "		
MW-12-4 "		
Mw-12-7. ""		
MW-12-8, ""		
MW-12-9 " "		
MW-12-10, " "		
MW-12-11, 5/5 liner-6"		
CHAIN OF POSSESSION		
Relinquished by: (GA) Road D. Athler	Received by: YILL Money Whind	Date/Time:
Relinquished by:	Received by:	Date/Time:
Whindberg Woulderg	R.G ALEXANDER	1-18-90/0610
Relinquished by:	Received by R4 Alefons	Date/Time:
Relinquished by:	Received by:	Date/Time:
·-·· 		

W	Westingh Hanford	ouse Company
	nantora	company

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SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION	CERCLA 1100-EM	1-1, Graundwater Monitoringle
Collector: Rand M.	Ver Date Samp	led: Jan 13-16 1990 Time: NA hours
Company Contact Ju	Lindberg	Telephone (504) 376-5005

SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED
MW-12-1	I plastic bag	Spil	Partide Size,	Moisture
MW-12-2	11	1/	11	И
MW-12=3	+1	1)	П	11
MN-12-4	11	11	ıı	ıı
MW-12-5	11	1/	ıı	II
MW-12-6	1)	11	H	il
MN-12-7	1,	17	11	/I
MW-12-8	+1	11	1)	u
MW-12-9	1)	11	11	11
MW-12-10	11	11	[[11
MW-12-11	1 6" Split Spoon Liner	11	Partide Size,	Atterberg Lin
MW-12-12	71	1)	Permeabilitu	

Fleid Information Well to on the east side o	emporary number 1.	MW-12 and fill.
Special Handling and/or Stora		
PART II: LABORATORY SECTION		
Received by	Title	Date
Analysis Required		
•		

indicate Whether Sample is Soil, Sludge, Water, Etc.

Use Back of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-1 Date 1-13-90 Released By Operational Health Physics	Bidg. MW-12-2 Date 1-73-90 Released By
· ·	Released By Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
•	Bidg. NW-12-4 Date 1-13-90
Bidg. MW-12-3 Date 1-13-96	
Released By Operational Health Physics	Released By Operational Health@hysics
Remarks	Remarks
	:
54-3000-022 (09/88)	54-3000-022 (09/88)
androne i de la companya de la comp Esta de la companya	
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-5 Date 1-13-90	Bldg. MW-12-6 Date 1-13-90
Released By Operational Health Physics	Released By Operational Health Physics
· · · · · · · · · · · · · · · · · · ·	Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
	The state of the s
	PADIATION DELEASE
RADIATION RELEASE	RADIATION RELEASE
Bidg. //W-12-7 Date /-15-90	Bldg. MW-12-8 pate 1-(5-90
Released By MAC GROPANY	Released By Operational Health Physics
96erational Health Physics Remarks	
111	Remarks

54-3000-022 (09/88)

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen No.	0-038	Cost Code/Work Order No. © 332
Requested By: Org.	80232	Person J. LINDBERG Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	1	ETAL-07
Hyproneter		ETAL- 07 (IF REQ)
MOISTURE	- 1	E14C-14
N/A	_ N/A	~/A
_		
Remarks FIED SAM MW-12-7	ple	Received By: R.G. Alexander Date 1-18-90
		Approved By: RG Alexander Date 1-29-9

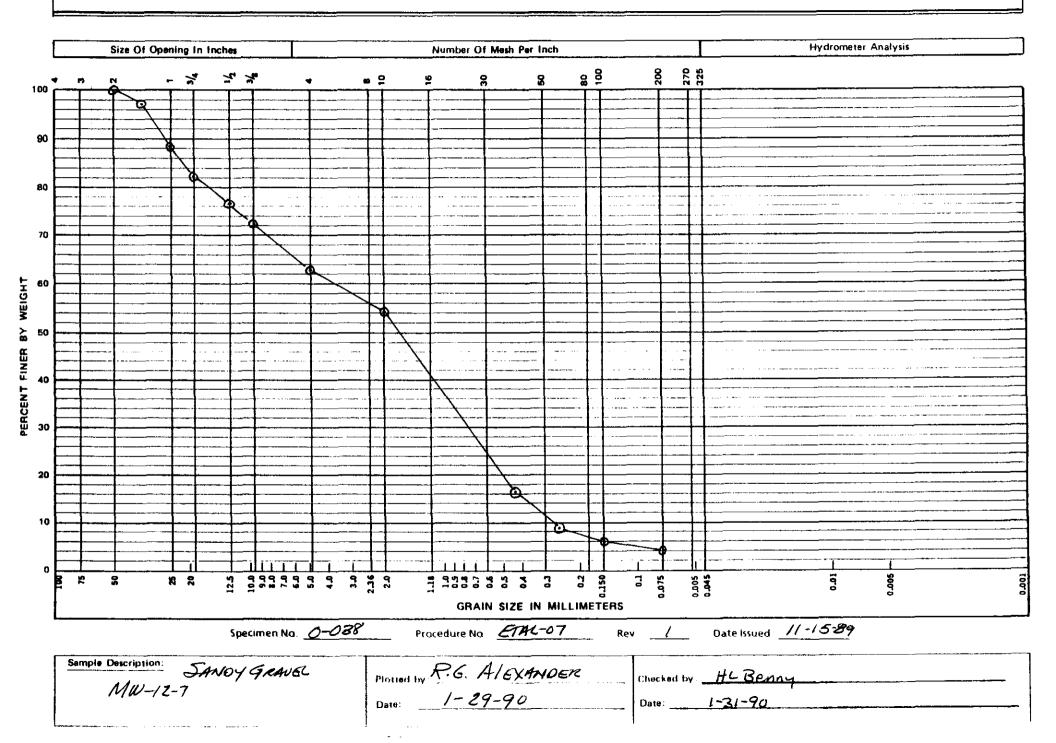
			SIEVE ANAI	LYSIS DAT	A SHEET		
	Sampl	e ID <u> </u>	038		Page	of	
	Te	sted By F	2G. ALEXAND	er i	Date <u> 1-29-9</u> 1	5	
	Pr	ocedure <u>l</u>	ETAL-07 Re	.v	Date Issued <u></u>	-15-81	
		Balance Thermome	eter CAI	3304 006	3-75-5	90	
		N/A		N/A	N/A		
Sampl			SANDY GRA				nin)
	reduced (B)	by K	splitting	(A)	g stockp	lle	
BEF	ORE TI	est wt. <u>~</u>	AFTER TE	ST WT. N/A	$\frac{B-A}{B}X 100 = \frac{A}{A}$	/A % LOSS	
Sleve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative %	Cumulative 7 Pass	% Pass
N/A	2	4501.57	Ø	Ø	Ø	100	100
	11/2		134.40	3.0.	3.0	97.0	97.0
			525.82	11.7	11.7	88.3	88.3
	3/4		797.27	17.7	17.7	82.3	82.3
	1/2		1054.08	23.4	23.4	76.6	76.6
	3/8		1249.22	27.8	27.8	72.2	72.2
	#4	y	1676.80	37.2	37:2	42.8	Lo2.8
	#10	4501.57	2062.44	45.8	45.8	54.2	54.2
	#40	149.59	1	70.2	70.2	29.8	16,2
	#60		125.67	84.0	84.0	16.0	8.7
	#100	1	132-67	88.7	88.7	11.3	6.1
*	# 200	*	138.34	92.5	92.5	7.5	4.1
	Piness l	Modules (FM	() <u>N/A</u>	(See ASTM C 1	36-83, Section		
MATERI	als fir	VER THAN	NO. 200 SIE	VE BY WASE			
			ssing a 200 Siev		Remark	EINE GRADI	
		eight of Sar	•	1 <u>49.59 m</u>	SMAL	L FIELD	<u> </u>
E=Dry Wel		Sample Afto (D-E)/D> 3	er Washing/Sieve	138.34 _m	FMAZ	، ربو	
OP	L DATA	ARE ACC	URATELY ANI AINED AND U		ATED INSTRU		T

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GRAIN SIZE ANALYSIS PLOT



W	Westingh Hanlord	ouse Company
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CHAIN OF CUSTODY

Company Contact: J. W. Cinbery	Telephone: 6.5005
Sample Collected by: R.D.Miller	Date: Inclusive dates Time: N/A
Sample Locations: MW-12	
Ice Chest No.:n/a	Fleld Logbook Page No.:
Remarks: Field Log book No WHK-N-30	Xo-3
Method of Shipment: _qait vehicle-han	od carry to J. Alexander 2101-11 lab
	entification
NW-12-1, plastic long	MW-12-12, 5/5 liner-6"
Nw-12-2 " "	
MW-12-3 "	
MW-12-4 11 "	
MW-12-5 "	
MW-12-4 "	÷ ·
Mw-12-7, " "	
MW-12-8, " "	
MW-12-9, "	
MW-12-10, " "	-
MW-12-11, 5/5 liner-6"	
CHAIN OF POSSESSION	
Relinquished by: Received by: Received by:	N) 1
Relinquished by: Received by	Cong JWL indberg Jan 16401455 Date/Time:
Whindher What RG A/E	= YANOEL 1-18-90/0610
Relinquished by: Received by	
Relinquished by: Received by	Date/Time:

SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. 6

THERMOMETER NO. OOO CALIBRATION DUE DATE Z-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-038	5445.07	5331,15	829.58	4615.49	4501.57	2,53
	_					
						,
:						
						\
	<u> </u>					

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

C

TEST OPERATOR: R.G ALEXANDER

DATE /-29-90

W	Westingh Hanford	ouse Company
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SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION CERCLA II	00-EM-1, Groundwater Monitoringle
Collector: Pand Miller Date	e Sampled: Jan 13-16 1990 Time: NA hours
Company Contact JW Lindberg	Telephone (504) 376-5005

SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED
MW-12-1	I plastic bag	Soil	Partide Size,	Moisture
MW-12-2	11	IJ	, , , , , ,	Ч
MW-12=3	11	ıj	H	11
MN-12-4	4	И	И	H
MW-12-5	11	H.	ti	н
MN-12-6	1)	11	н	11
MM-12-7	1)	17	11	μ
MW-12-8	1	11	1)	u
MW-12-9	1)	11	11	r I
MW-12-10	1)	11	и	11
MW-12-11	1 6" Split Spoon Liner	11	Particle Size,	Atterberg Li
MW-12-12	//	1)	Permeabilit	

Field information Well	temporary number 1	MW-12
on the east side	of the HornRapids L	and fill.
Special Handling and/or Stor	age	
PART II: LABORATORY SECTIO	N	
Received by	Title	Date
Analysis Required		
* Indicate Whether Sample 1	- Sail Studge Water Fts	

Use Back of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-1 Date 1-13-90	Bidg. MW-12-2 Date 1-73-90
Released By Operational Health Physics	Released By Operational Health Physics
Operational Health Physics	Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
· · · · · · · · · · · · · · · · · · ·	· 1
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-3 Date 1-13-96	8ldg. NW-12-4 Date 1-13-90
Released ByOperational Health Physics	Released By Operational Health@hysics
Operational Health Physics	· / /
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
Bldg	Bldg. NW-12-6 Date 1-13-90
Released By	Released By Operational Health Physics
Operational Health Physics	Operational Health Physics
Remarks	Remarks
	·
54-3000-022 (09/88)	54-3000-022 (09/88)
	Transfer of the second
y.	A. T. Carlotte and
RADIATION RELEASE	X RADIATION RELEASE
M(1)-17 7 (100)	Bldg. MU-12-8 pate 1-(5-90
Bldg	Bldg
Released By MAC GROLAND	Released By MI (all and
Operational Health Physics	Operational Health Physics
Remarks	Remarks
- Lamplo	/ Spurple
54-3000-022 (09/88)	54-3000-022 (09/88)

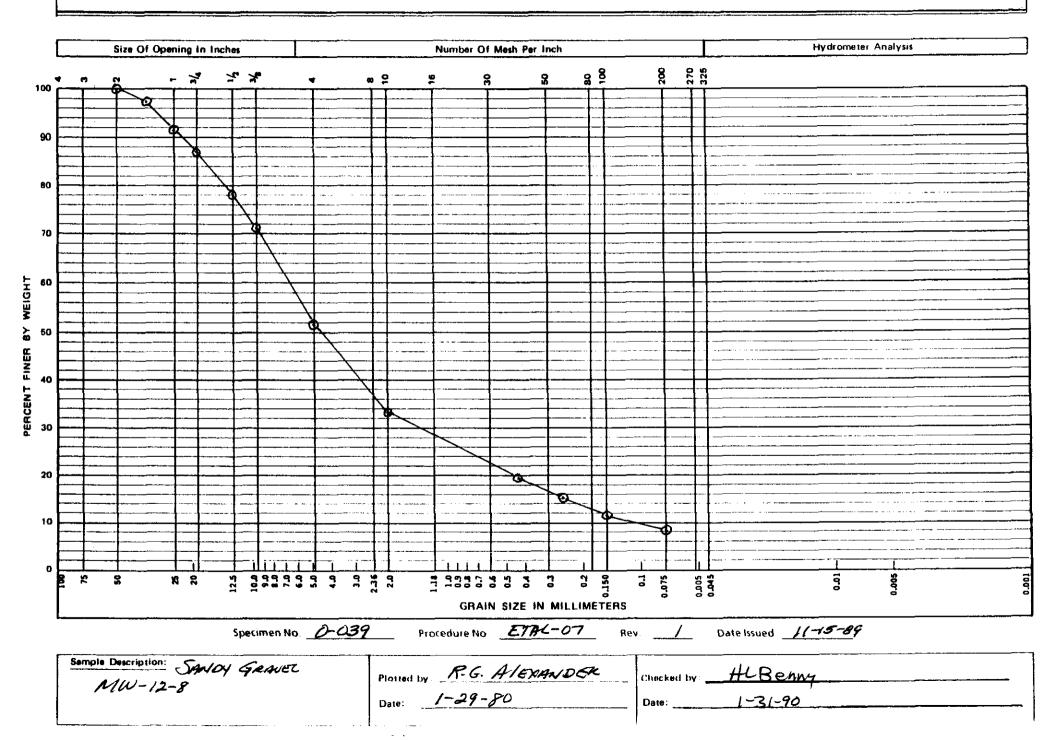
TEST REQUEST FORM

Sample/Specimen No	.0-039	Cost Code/Work Order No. ED332
Requested By: Org	. 80232	Person J. LINDBERG Date 1-29-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS	/_	ETAL-07
HYDROMETER	1	ETAK-07 (IF REW)
MOISTURE	/	ETA C- 14
NA	N/A	N/4
	•	
Remarks <i>FIEO SA</i> <i>MW-12-8</i>	MPCE	Received By: R.G. Alexander Date 1-18-90
MW-12-8		Approved By: R.G. ALEXANDER Date 1-29-90

	_								
					SIEVE ANA	LYSIS DAT	A SHEET		
	S	ampl	e ID_	0-0	39		Page /	of _/	
		Te	sted	By A	R.G. ALEXAN	IDER I	ate_ /-29-9	10	
				-				1	
ļ		Pr	oced.	ure	= 7AC- 07 Re	. v / I	Date Issued <u>//</u>	1-15-89	
ŀ			EOI	יו אנפון	NT ITEM CA	ת זמתאיינות א	IO. DATE D	नार	
			Bala		INI IIEM CA	3304	5-25		
	Thermometer 0006				2-6				
				NA		NA	N/A	<u>•</u>	
Sa	mple	Desc	ripti	on_s	SANDY GRA	i R	Sieve Tir	no 10 (min)
							stockp		.11111)
		(B)	. <i>D.y</i>		- CA	(A)	<u></u>	/.	
]	BEFO	RE TI	est v	vr. <u>#</u> /	A AFTER TE	ST WT.	$\frac{B-A}{B}X \ 100 = \Delta$	WA % LOSS	
Sieve	ID	Sieve	Son	nple	Cumulative Wt	~ D.4.44		Cumulative :	z
Numi	}	Size	Welg	-	Retained (g)	- % Retained	Cumulative % Retained	Pass	% Pass
	<u>_</u>	2	ļ		Ø	106		/ 4 5	1
NIA	+		766	8.13		Ø	9	100	100
		11/2			117.23	27	2.7	97.3	97.3
			<u> </u>	<u> </u>	361.25	8.5	8.5	91.5	91.5
		3/4			552.88	13.0	13.0	87.0	87.0
		1/2			936.67	21.9	21.9	78.1	78-1
		3/8			1236.31	29.0	29.0	71.0	71.0
		4 4	1	·	2060.17	48.3	48.3	51.7	51.7
		#10	4268	3.13	2849.94	66.8	66.8	33.4	<i>33.</i> 2
		4 40	147	2.17	58.89	41.4	41.4	58.6	19.5
	1	£60			77.96	54.8	54.8	452	15.0
	:	4100			92.30	64.9	64.9	35,1	11.7
T	,	# 200			107.17	15.4	754	24.6	8.2
	F	Incss l	Modul	es (FM	2/4		36-83, Section		1 0 -
MAT	'ERIA	LS FII	NER '	THAN	NO. 200 SIE	VE BY WASE	IING		
					ssing a 200 Sie		Remarl		
		Dry We			_	1 42.17 g	ASH F	INE GRAD	MG
E=Dry	y Weig	ht of S	Sampl	e Afte	r Washing/Sieve		Pan	L FIELD DLE	
		C = <							_
	ALL	DATA	ARF	E ACC	URATELY AN	O COMPLETE	LY RECORDE	THE TES	ST
	OPE	ERATO	R WA	S TR	AINED AND U		ATED INSTRU	MENTS	
	Che	eked	By_	HUB	enny	· · · · · · · · · · · · · · · · · · ·	Date	1-31-90	_

A-8400-204(2-87)

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO.

THERMOMETER NO. 0006 CALIBRATION DUE DATE 2-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-039	FEC 5270.93	5124.69	856.56	4414.37	4268,13	3,43
					/	
			\times			
		/				
			· · · · · · · · · · · · · · · · · · ·			
		: 				

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

RG ALEXANDER

DATE /-Z9-90

W	Westingh Hanford	ouse Company
	:	

CHAIN OF CUSTODY

1		CHAIN OF COS	1001	
Company Contact:		Y		
Sample Collected by:	R.D.M.IL	ev	Date: Inclusive é	dales Time: Ma
Sample Locations:	MW-12			
Ice Chest No.:	1/0-		Fleld Logboo	ok Page No.:
Remarks: Field Log !	book No# a	HC-N-306-3	>	
Method of Shipment:	goit ve			xander 2101-11 lab
		Sample Identifi	ication	4
MW-12-1, plaste	bag		MW-12-12, 5/	s liner-6"
NW-12- Z "	d)			
MW-12-3, 1.				*.
MW-12-4 11	-			
MW-12-5 "		· · · · · · · · · · · · · · · · · · ·		
MW-12-4 4	•		_	, d
Mw-12-7, "				
MW-12-8, "				
MW-12-9, "				
MW-12-10, "				
MW-12-11, 5/5 liv	ver-6"		* ************************************	
CHAIN OF POSSESSIO	ON			
Relinquished by:		Received by:		Date/Time:
and my	D. Niller	You Timbles	a JWLindberg	Jan 16901455
Relinquished by:	\cap	Received by:	1	Date/Time:
Julindberg Wom	llera	R.G Alexan	IDER	1-18-90/0610
Relinquished by:		Received by: R4	4 Alepana	Date/Time:
Relinquished by:		Received by:		Date/Time:

W	Westingh Hanford	ouse Compan	Y
E	Hanford	Compan	

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Herberg

Use Back of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Released By Operational Health Physics	Released By Operational Health Physics
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE Bidg. MW-12-3 Date 1-13-96 Released By Operational Health Physics Remarks	RADIATION RELEASE Bldg
FA-3000-022 (09/88) RADIATION RELEASE Bldg. MW-12-5 Date 1-13-90	54-3000-022 (09/88) RADIATION RELEASE Bldg. NW-12-6 Date 1-13-9 0
Released 8y Operational Health Physics Remarks	Released By Operational Health Physics Remarks 54-3000-022 (09/88)
RADIATION RELEASE 8Idg. MW-(Z-7 Date 1-15-90 Released By MAGAGAN Operational Health Physics	RADIATION RELEASE Bidg. MU-17-8 pate 1-(5-90) Released By Market Department of the Physics
Remarks	Remarks

54-3000-022 (09/88)

54-3000-022 (09/88)

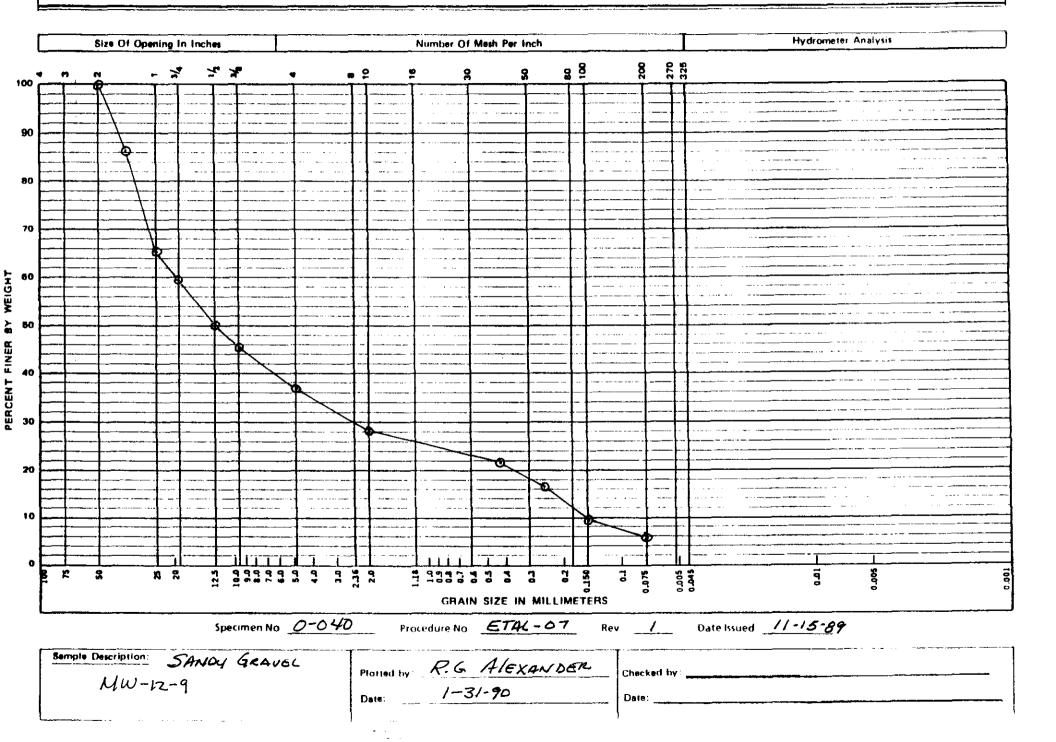
TEST REQUEST FORM

Sample/Specimen No	0-040	Cost Code/Work Order No. ED332
Requested By: Org	. <u>80232</u>	Person J. LINDBERG Date 1-31-89
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEVE ANALYSIS		Etal-07
Hyprometer	1	ETAL-07 (IFRED)
MOISTURE		ETAL-14
Alu	NIA	NIA
	•	
Remarks Fiew San Mw-12-9	wec	Received By: RG ALEXANDER Date 1-18-90
		Approved By: R. 6 Alexanor Date 1-31-90

			SIEVE ANAL	YSIS DAT	A SHEET		
	Sampl	e ID <u>O</u> ¬C	240		Page 1	of	
	Tes	sted By_F	RG AIEXAN	1der i	ate <u>1-31-9</u>	0	
ŧ		-					
	Pri	oceaure_ <u>-</u>	ETAL-07 Re	V	Date Issued_1	1-15-89	
		EQUIPME	NT ITEM CAI	IBRATION N	O. DATE D	UE	
		Balance		3304	3-25		
! !		Thermome		000G N/A	2-G N/A		
Samp	le Desc	ription	SANDY GR	ZAVEL	- Sieve Tir	ne_10_(1	min)
	reduced	by 🕱	plitting]	X quartering	stockp	lle	
BEF	(B)	est wt.	AFTER TE	ST WT. WA	$\frac{B-A}{B} \times 100 = \frac{A}{A}$	VA % Loss	1
Sieve ID	Sieve	Sample	Cumulative Wt.	% Retained	Cumulative %	Cumulative ;	Z 7 Pres
Number		Weight	Retained (g)	24 Retained	Retained	Pass	74 F#35
N/A	2	4378.14	Ø	Ø	Ø	100	160
]	11/2		607.98	13.9	/3.9	86.1	86.1
	1 1		1512.11	34.5	34.5	65.5	65.5
	3/4		1778.77	40.6	40.6	59.4	59.4
	1/2		2190.73	50.0	50.0	56.0	50.0
	3/8		2392.24	54.4	54.6	45.4	45.4
	#4		2774.49		63.4	36.6	36.6
		4378.14	3140.34		71.7	 	
	#40	:		71.7		28.3	28.3
	#60	148.63	34.59	23.3 41.6	23.3 41.6	76.7 58.4	21.7
			61-79				16.5
	π- 4100		98.90	46.6	66.6	33.4	9.5
 _	# Z00	Ţ	119.67	80.6	80.6	19.4	5.5
···		Modules (FM			36-83, Section	8.2)	
	····		NO. 200 SIE		IING Remarl	čs	
		Material Pas Light of San	ssing a 200 Siev	148,53 m	******	FINEGRA	DING
_	_	-	r Washing/Sleve		SMA	LL FIELD	
2 275 00	_	(D-E)/D> X	-	II IIVI		1FLC	
AT	L DATA	ARE ACC	URATELY ANI	COMPLETE	LY RECORDED). THE TES	
OF	PERATO	R WAS TR	AINED AND U		ATED INSTRU	MENTS	
l ሮክ	hastage	Br HLI	Sonn		Data	1-31-90	Ì

A-6400-204(2-87)

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. COOG CALIBRATION DUE DATE 2-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-040	5076.25	4956.20	578.06	4198.19	4318.14	2.74
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		/				,
			· · · · · · · · · · · · · · · · · · ·			
<u> </u>						
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						\
_/					-	

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR:

R.G. ALEXANDER

DATE /-3/-90

(W)	Westingh Hanford	ouse Company
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O.

6

CHAIN OF CUSTODY

•	CHAIN OF CO	31001	
Company Contact: J. L.	1 Lindberry	Telephone	6.5005
Sample Collected by:	D Miller	Date: Inclusive	dales Time: 1/4
Sample Locations:M			
Ice Chest No.:n/o		Field Logbo	ok Page No.:
Remarks: Field Log book	No# WK-N-306-	3	
Method of Shipment: 4	oit vehicle-hand	carry to J. Ale	rander 2101-14 lab
	Somple Identi	ification	A
UW-12-1, plaste bag		MW-12-12, 5/	's liner-6"
MW-12- 2 " "			
MW-12-3 1 4		-	• •
MW-12-4 11 "			
MW-12-5, " "			
MW-12-4 4 "			į
Mw-12-7 " "			
MW-17-8, " "			
MW-12-9, "			
Mw-12-10, "			
MW-12-11, 5/5 liner-	<i>G</i> "		
CHAIN OF POSSESSION			
Relinquished by	Received by:		Date/Time:
Quelmil Ray DI	Wiler YOLTINDE	na JWL indberg	Jan 16901455
Relinquished by:	Received by:	1	Date/Time:
Whindberg Would a	a RIG ALEXA	NOER	1-18-90/0610
Relinquished by:	Received by: R		Date/Time:
Relinquished by:	Received by:		Date/Time:

W	Westingh Hanford	ouse Company
	DOMONG	oumpany

	SAMPLE ANALYSIS REQUEST					
PART I: FIE	LE SECTION CERCLA	100-EM	-1. Graundwater	Monitoringle		
Collector:	Rand Miller on	ste Sample	id: Jan 13-16 1990 11	me: <u>NA</u> hours		
	Contact <u>JW Lindberg</u>		•			
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED		
MW-12-1	I plastic bag	Soil	Particle Size,	Moisture		
MW-12-2		"	11	1/		
MW-12=3	И	1)	II.	11		
MAJ-12-4	11	11	ıl	i t		
MW-12-5	l)	.1/	11	11		
MN-12-6	1)	11	11	(f		
MN-12-7		ij	11	11		
MW-12-8	ij	11	1)	i i		
MW-12-9	.1	11	11	11		
	11	11	и	H		
1111-12-11	1 6" Split Spoon Liner	11	Particle Size,	Atterberg Lin		
MW-12-12	11	1)	Permerbilitu			
	mation Well tempor east side of th ndling and/or Storage	ary nu e Horni	mber MW-1. Rapids Landfil	<u>2</u>		
PART II: I	ABORATORY SECTION					
Received b	Υ	Title	· · · · · · · · · · · · · · · · · · ·	Date		
Analysis Re	equired					
Indicate	Whether Sample is Soil, S	Sludge, Wa	ter, Etc.			

Use Back of Page for Additional information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-1 Date 1-13-9-0	Bldg. MW-12-2 Date 1-13-90
Released By Operational Health Physics	Released By Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
·	34-3000 022 (05/00)
No. 1984 - Communication of the Communication of th	•
RADIATION RELEASE	RADIATION RELEASE
11291	Bidg. NW-12-4 Date 1-13-90
Bldg. MW-12-3 Date 1-13-96	
Released By Operational Health Physics	Released ByOperational Health@hysics
Operational Health Physics	
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
	·/
*	
RADIATION RELEASE	RADIATION RELEASE
1111 12 15 12 90	Whit \$3-6 1 12-9 5
Bldg. MW-12-5 Date 1-13-90	Bldg. NW-12-6 Date 1-13-90
Released By Operational Health Physics	Released By Operational Health Physics
Operational Health Physics	Operational Health Physics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-7 Date 1-15-90	Bldg. MW-12-8 pate 1-(5-90
Released By	Released By M. (alland
Operational Health Physics	Operational Health Physics
Remarks	, Remarks
1 Maria Pa	1. Dunal
54-3000-022 (09/88)	54-3000-022 (09/88)
. 54-3000-022 (05/00)	1
	and the second of the second o
RADIATION RELEASE	RADIATION RELEASE
h A	A.M
Bldg. 100-17-9 Date 175-90	Bidg. 10 Date 1-15-40
Released By Marchand	Released By MCalland
Operational Health Physics	Operational Health Physics
Remarks	Remarks
1. Mush	1. Danoli

54-3000-022 (09/88)

54-3000-022 (09/88)

TEST REQUEST FORM

Sample/Specimen	No. 0-041	Cost Code/Work Order No. ED 332
Requested By:	0rg. <u>80232</u>	Person J. LINDBERG Date 1-31-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEUE ANAMOUS	•	ETAL-07
HYDROMETER		ETAL- 07 (IF REQ.)
Mourure		ETAL-14
NA	N/A	NIA
	•	
Remarks Fi€LD MW-12-10	SAMPLE	Received By: RGAIEX ANDER Date 1-18-5
<u></u>		Approved By: RG ALEXAMOGR Date 1-31-95

			SIEVE ANAI	YSIS DAT	A SHEET		
	Sampl	e ID <u>O</u> -	041		Page _ l	of	
	Te	sted By 1	S. G. Alexan	ider i	ate <u> -3 -</u>	90	
	Pr	ocedure_	ETAL-67 Re	v <u> </u>	Date Issued <u>l</u>	1-15-89	
		EQUIPME Balance Thermome		IBRATION N 330 4 0004 N/A	10. DATE E 3-25 2-4	-90	
Samp	le Desc	ription_	SANDY GRI	rver	Sieve Tir	ne <u>10</u> (n	nin)
<u> </u>	reduced	by 🔯	splitting [quartering	: 🔲 stockp	lle	
BEI	(B) FORE TI	357 WT. <u>N</u>	A AFTER TE	ST WT. N/A	$\frac{B-A}{B}X \ 100 = 2$	W/A % LOSS	
Sieve ID Number	Sieve Size	Sample Weight	Cumulative Wt. Retained (g)	% Retained	Cumulative %	Cumulative %	% Pass
N/A	2	4491.12	Ø	Ø	Ø	190	100
	11/2	1	135.88	3.0	3.0	97.0	97.0
	1		479.53	10.7	10.7	89.3	89.3
	3/4		705.32	15.7	15.7	84.3	84.3
	1/2		1273.80	28.4	28.4	71.6	71.6
	3/8		1700.42	37.9	37.9	62.1	62.1
	# H	4	Z685, 32	59-8	59.8	40.Z	40.2
	#/0		3277.85	73.0	73.0	27.0	27.0
	#40	153.37	₩ 1 53.87	29.3	243	70.7	19.1
	#60	<u> </u>	77.91	50:8	50.8	49.2	13.3
	# 100	ļ	107-68	70.2	70.2	29.8	8.0
y	# 500	<u> </u>	123.98	80.8	80.8	19.2	5 . Z
	Finess l	Modules (FA	(1) <u>~/A</u> (See ASTM C 1	36-83. Section	8.2)	
MATERI	ALS FI	VER THAN	NO. 200 SIE	VE BY WASE			
			ssing a 200 Siev		Remark	EINE GRI	ADIAU-
**	_	eight of San	-	/ <u>53,37 m</u>	SMA	L FIELD	10,.03
E=Dry We		$\frac{\text{CD-E}}{\text{D-E}}$	r Washing/Sieve 100	/ <u>73.98 r</u>	SAM	PLE	
			URATELY AND				
		r was tr By <i>HUI</i>	ained and us Benny	SED CALIBRA		ments <i>1-31-9</i> 6	

A-8400-204(2-87)

			HYDROMETER A	NALYSIS DA	TA SHEET			
Sample !0	0_0	-041			Page	of/		
			—			-90		•
		Procedure <u>ETA</u>	207 Rev /	Date Issued	-/5-84			
		EQUIPN	IENTITEM	NO.	DUE	DATE		
		Hydrometer		1000 2-16-91 3304 3-25-90 2-9-91 2-9-91 2-9-91 2-9-91 3-25-90 2-9-91 3-25-90 2-9-91 3-25-90 3-25-9				
		Balance		3304			}	
		Thermomete	r/Thermocouple	2002	<u> 2-</u>	9-91		
[-	of Sample 2			YGROSCOPIC N	AOISTURE C	ONTENT	
Ĭ	_			Wt. Conta	iner + Air Dry	/Soil/	A (3)
Hygrosc	opic Corr	ection Factor	_φ	Wt. Conta	iner + Oven (Ory Soil	<i>NA</i> (c	3)
	· v	VEIGHT OF SAM	PLĘ	Wt. Conta	iner	NA	(c	3)
Wt. Con	tainer +	Šoil	<i>NA</i> (9)	Water Co	ntent	NA	(9	%)
Wt. Con	tainer		<i>NA</i> (g)					
Wt. Soil			<i>50.0</i> (g)		REI	MARKS		
į		APOSITE CORRE	CTION				1	
							dings Sou	K.
1 st Read	ling	at	<u>23 · 8</u> °C	_ 43_ 8	MAN			
2nd Rea	ading	<i>NA</i> at	°C	W> 185	.19			
				Assume	"a" = 1.11	, K=0.0	>1447	
Date	Clock time	Elapsed time (min)	Hydrometer reading			Temp. (°C)	Soil in suspension (%)	Particle diameter (mm)
2-23-90	1507	2.0	24		/8	25.0	10.8.	0.036
	1510	5.0	12			25.0	3.6	0.022
	1520	15.0	7		<u> </u>	25.0	0.60	0.010
	1535	30.0	77		1	25.0	0.6	0.00
	1605	60.0	7		1	24.7	0.6.	0.005
	1915	250.00	6		Ø	24.4	Ø	Ø

Formulas and Tables used to calculate percent Soil in suspension, particle diameter and hygroscopic correction factor are found in ASTM D422.

NA

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

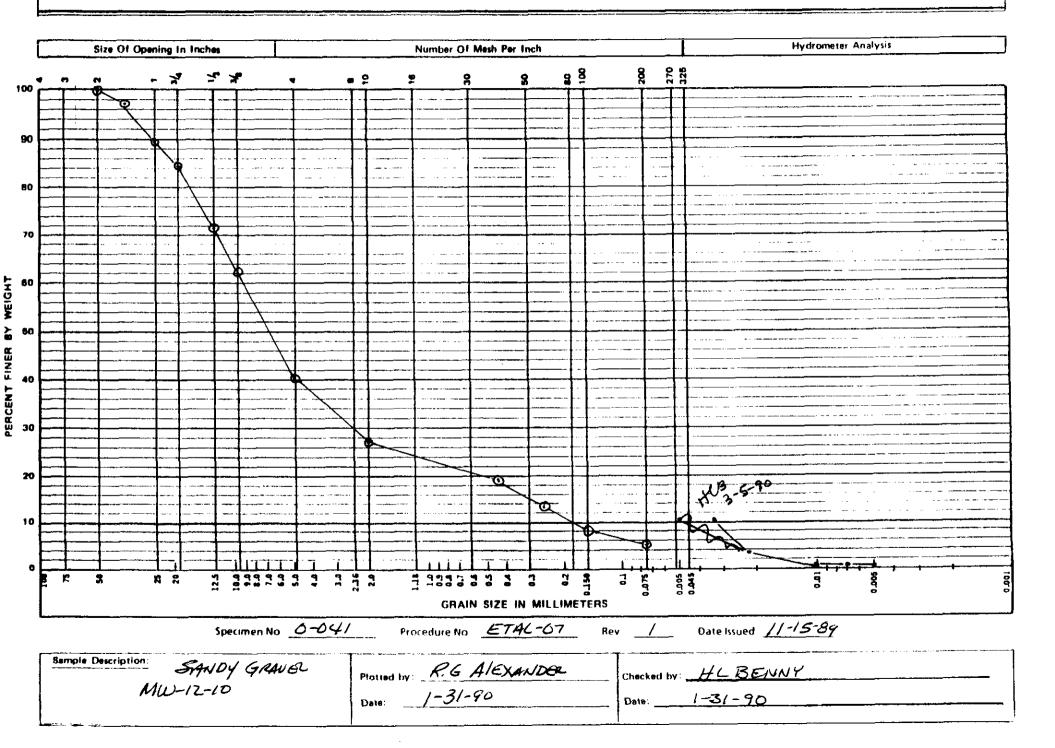
Checked By R.G ALEXAWORK

1,440.0

NA

Date 3-5-90

GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. Ø

THERMOMETER NO. Oog 6 CALIBRATION DUE DATE 2-6-90

	<u> </u>		,	.,		
SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-041	5283.17	5080.51	589.39	46 93,78	4491.12	4.51
					/	
		<u> </u>				
				/		
			 	/		-
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	1					
			\			
	:					
						<u> </u>
	1					
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) <u>. </u>		: -				
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ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

TEST OPERATOR: R.G. ALEXANDER

DATE 1-31-90

W	Westingh Hanford	ouse Company
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CHAIN OF CUSTODY

*		
Company Contact: J. W. Cardbe	Telephone	6.5005
Sample Collected by R.D.Miller	Date: Inclusive	dales Time: 1/4
Sample Locations:NW-12		·
Ice Chest No.:n/a	Field Logbo	ook Page No.:
Remarks: Field Logbook No# WH	L-N-306-3	
Method of Shipment: _ gait vehice	lo = 1, a . d . a A .	1 2101 1111
•	Sample Identification	Hander 2101-in Up
NW-12-1, plastic bag	·	15 liner-6"
Nw-12-2 " "		
MW-12-3, " "		•
MW-12-4 11 "		
MW-12-5, " "		
MW-12-4 "		÷
Mw-12-7 " "		
MW-12-8, " "		
MW-12-9, "		
MW-12-10 "		
MW-12-11, 5/5 liner-6"	<u> </u>	
CHAIN OF POSSESSION		
Relinquished by: Re	eceived by:	Date/Time:
Gardon Row D. Miler	Il Tinllera JWL indberg	Jan 16901455
Relinquished by:	eceived by:	Date/Time:
Relinquished by: Re	eceived by: R4 Alshura	1-18-90/0610
Kennquisitou by.	eccived by. N. A. August	Date/Time:
Relinquished by:	ecelved by:	Date/Time:

W	Westingh Hanford	ouse Company
---	---------------------	-----------------

SAMPLE ANALYSIS REQUEST						
PART 1: FIELD SECTION CERCLA, 1100-EM-1, Groundwater Monitoring lle						
Collector:	Pand Miller o	ate Sample	d: <u>Jan 13-16, 1990</u> T	lme: <u>NA</u> hour		
Company Co	ntact_JwLindberg		Telephone (£21)	376-5005		
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RI	EQUESTED		
MW-12-1	I plastic bag	Soil	Partide Size	Moisture		
MW-12-2	11	1/	(1	И		
MU-12=3	11	11	11	11		
MN-12-4	11	11	11	ı t		
MW-12-5	U	11	ŧI	II		
MW-12-6	11	11	н	tl.		
MN-12-7	1)	· · ·	- 11	11		
MW-12-8	1)	11	1)	H.		
MW-12-9	.)	11	11	r l		
MW-12-19	()	11	- 11	11		
MW-12-11	6" Split Spoon Liner	- 11	Particle Size,	Atterberg Li		
MW-12-12	11	1)	Permeabilit			
Field Information Well temporary number MW-12 on the east side of the HornRapids Landfill. Special Handling and/or Storage						
PART II: LA	BORATORY SECTION					
Received by Title Date						
Angivsis Red						

Indicate Whether Sample is Soil, Sludge, Water, Etc.

Use Bock of Page for Additional Information Relative to Sample Location.

RADIATION RELEASE	RADIATION RELEASE
Bldg. MW-12-1 Date 1-13-9-0	Bldg. MW-12-2 Date 1-73-90
	Blog. 11/0 2 Date Date
Released By Operational Health Physics	Released By Operational Health Physics
Operational Health Physics	Operational Health Physics
Remarks	Remarks
. 54-3000-022 (09/88)	40.00
34-3000-022 (03/00)	54-3000-022 (09/88)
	And the second s
·	
RADIATION RELEASE	RADIATION RELEASE
44	81dg. NW-12-4 Date 1-13-90
Bldg. MW-12-3 Date 1-13-96	8ldg. / 100 1 Date / 100 / 0
	Released By
Released By Operational Health Physics	Released By Operational Health@hysics
	Remarks
Remarks	nemarks
54-3000-022 (09/88)	54-3000-022 (09/88)
RADIATION RELEASE	RADIATION RELEASE
	Ĭ
Bldg. MW-12-5 Date 1-13-90	Bldg. NW-12-6 Date 1-13-90
	2.
Released ByOperational Health Allysics	Released By Operational Health Physics
	Operational near with mysics
Remarks	Remarks
54-3000-022 (09/88)	54-3000-022 (09/88)
grand to the second of the sec	
	>
RADIATION RELEASE	RADIATION RELEASE
11/11/7 -	Bldg. MU-12-8 pate 1-15-90
Bldg. MW-12-7 Date 1-15-90	Bidg. 1-15-8 Pate /-(5-90
Released By	Released By M/ Calland
Operational Health Physics	Operational Health Physics
Remarks	Domarke
	. Remarks
- Janislo	- / Smifle
54-3000-022 (09/88)	54-3000-022 (09/88)
	" Para Para Para Para Para Para Para Par
RADIATION RELEASE	RADIATION RELEASE
A A	A.4.
Bldg. 100-17-9 Date 175-90	Bidg. MW-12-10 Date 1-15-90
	11/2001
Released By M. (Gilland	Released By Mand
Operational Health Physics	◇herarioual Héaltµ suàsica
Remarks	Remarks
1 Janilla	/ Janeli
54-3000-022 (09/88)	54-3000-022 (09/88)

Sample No. 0-041 Page _____ of ____ Test Operator HCBenny Thermometer No. 0007 Calibration Date 8-16-90 WATER CONTENT (Wn) Liquid Limit (LL) <u>MA</u> Graph Plastic Limit (PL) <u>NA</u> (Avg.) Liquid Limit (LL) NA One Point Moisture (PL) NA % NA % Plastic Index (PI)* <u>NA</u> Moisture (LL) NA % *PI = LL - PLRemarks Non-Plastic (Volcanic Ash ALL DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPIATELY TRAINED AND ULITIZED CALIBRATED TEST INSTRUMENTS. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THIS DATA.

Sample is not cohesive. Liquid limit can't be

performed.

PLASTIC INDEX SOILS DATA SHEET

TEST REQUEST FORM

Sample/Specimen No.	0-042	Cost Code/Work Order No. ED 332
Requested By: Org. 80232		Person J. LINDBERG Date 1-31-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
SIEUE ANNLYSIS		ETAL -07
Hydrometer		ETAL- 07 (IF RED)
ATTERBORG LIMITS		ETAU- 18
NA	4/4	N/A
	·	
Remarks FIRD SA MW-12-11	mpce	Received By: RG ALEXANDER Date 1-18-9.
		Approved By: RG Alexanous Date 1-31-9

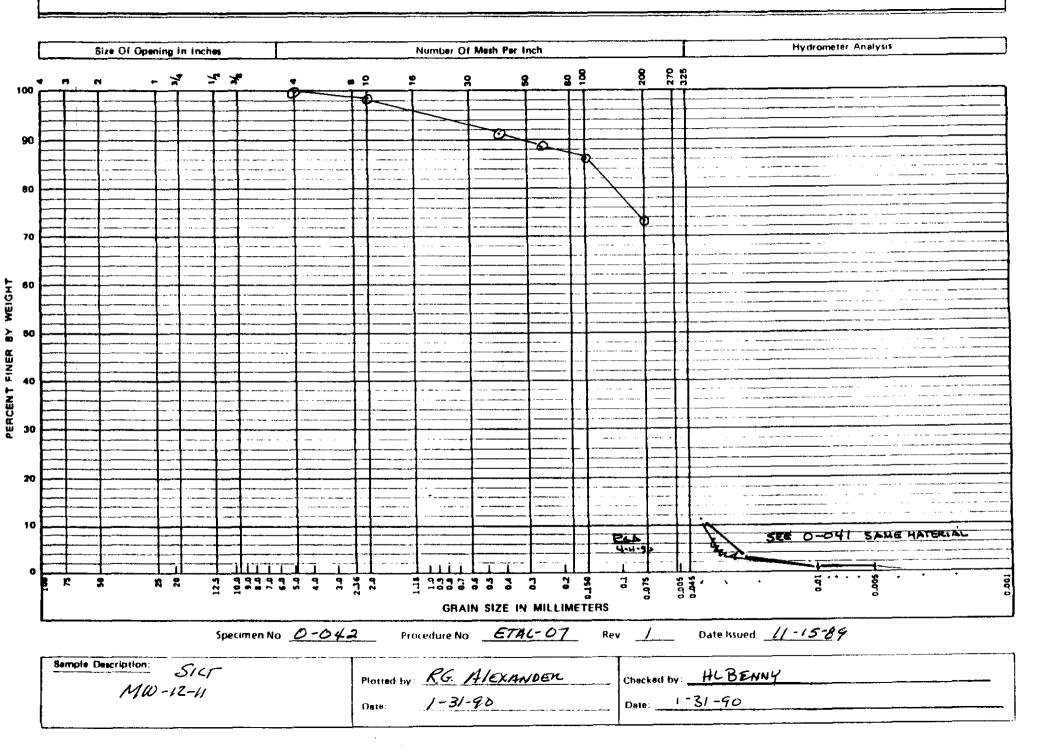
			SIEVE	ANAL	YSIS	DAT	A SH	EET				
Sa	mple I	D <u>O</u>	042				Page	e	of/			
	Teste	1 By_ <i>K</i>	? G. A	4/exa	~UE	<u>e</u> [ate	1-31-9	0			
	Proce	dure_	57AL-07	Z_ Re	∇⁄	<u>,</u> 1	Date I	ssued <u>/</u>	1-15-89	-		
	Ba	lance	NT ITE	M CAL	33	304	10.	DATE D	90			
	Th	ermome N/#	ter		<i>N</i>	06		2-6 N/H				
Sample I	Descrip	tion	ŠILT				s	ieve Tir	ne 10	 (m	in)	
			plitting					□ stockp				
BEFOR	(B) E TEST	WT.A	AFT.	ER TE	(A) ST W	r. <u>N/A</u>	B-A _X	100 = 4	/A % L	oss		
	1	ample eight	Cumula Retaine		% Re	tained	į	ulative % tained	Cumulat Pass		% P	282
N/A											\Box	
										1		
	1	+						y	1	:	7	
ħ	4 1	11.50	Ø	ļ	5	Ø		Ø	100	5 1	10	0
杜	10		1.5	4	/.	4	,	1.4	98.	6	98.	6
#	40		10.1	4	9.	1	g	7. /	90.	9	90.	
# (٥و		12.	96	11.	6	H	1.6	88.	4	88.	4
# 1	60		15.2	54	13.	9	/3.9		84.	1	86	.1
† † †2	∞	7	29,	62	24.	4	24	.6	73.	4	73	.4
Fin	ess Mod	ules (FM) _ No	/H (See A	STM C 1	36-83,	Section	8.2)			
MATERIALS	FINE	THAN	NO. 20	0 SIE	VE BY	WASE	IING	D 1				
C=Percentage			_	00 Siev				Remar!		DING		
D=Original D	•		•	/5!	111.50	_			U FIEL			
E=Dry Weight	= <(D-			g/Sieve	29.62	-6		SAM	PLE			
!								ECORDEI INSTRU		TEST		
			Benny						1-29-9	20_		

 \Box

* * 4

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GRAIN SIZE ANALYSIS PLOT



SOIL MOISTURE DATA SHEET

PROCEDURE NO. ETAL-14 REV. NO. 9

THERMOMETER NO. 5006 CALIBRATION DUE DATE 2-6-90

SAMPLE NO.	WET WT. + CAN	DRY WT. + CAN	CAN WT.	WET WT. SOIL	DRY WT. SOIL	% WATER
0-042	2487.54	1912.96	588.48	1899.06	1324.48	43.38
						1
						İ
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	 /		1			
	/					<u> </u>
	i		<u>!</u>	 		

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND TEST PROCEDURES FOLLOWED TO PRODUCE THE ABOVE DATA

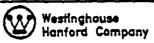
TEST OPERATOR: R.G ALEXANDER

DATE /- 3/-96

Westinghouse Hanford Company
Company Contact: .
Sample Collected b
Sample Locations:
lce Chest No.:
Romarks: Field Lo

CHAIN OF CUSTODY

•	
Company Contact: J. W. Lindberry	Telephone; 6.5005
Sample Collected by: R.D. Miller	Date: Inclusive dates Time: NA
Sample Locations: MW-12	
Ice Chest No.:	Fleld Logbook Page No.:
Romarks: Field Log beak No WWK-N-	3 06-3
Method of Shipment: gait vehicle-h	and carry to J. Alexander 2101-11 lab
•	Identification
MW-12-1, plaste bag	MW-12-12, 5/5 liner-6"
MW-12-2 " "	
MW-12-3, " "	<u> </u>
MW-12-4 " "	
MW-12-5 " "	
MW-12-Lp "	
ww-12-7, ""	
MW-12-8 " "	
MW-12-9, "	
MW-12-10 "	
MW-12-11, 5/5 liner-6"	
CHAIN OF POSSESSION	
Relinquished by: Received	by: Date/Time:
for May Cond Miles The	Mera Whindberg Jun 16901455
Relinquished by:	by: Date/Time: 1-18-90/06/D
Relinquished by: Received	by: R4 Alexand Date/Time:
Relinquished by: Received	by: Date/Time:



	SAMPLE A	NALYSIS RI	EQUEST			
PART I: FIE	LD SECTION CERCLA	1100-EM	-1. Groundwate	- Monitoring le		
Collector:	Rand Miller o	ate Sample	d: Jan 13-16 199011	ime: NA hours		
Company (Contact JW Lindberg		Telephone (()	376-5005		
SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE	ANALYSIS RE	QUESTED		
MW-12-1	I plastic bag	Soil	Particle Size,	Moisture		
MW-12-2	11	1/	11	1/		
MW-12=3	11	1)	11	11		
MAI-12-4	11	Н	II.	ıı .		
MW-12-5	11	11	e e	II		
MX-12-1	11	11	H	į l		
MM-12-7		U	11	μ		
MW-12-8	a)	H	1)	TI I		
MW-12-9	, 1	11	11	11		
MW-12-10	11	11	U	11		
MW-12-11	. //	. 11	Particle Size,	Atterberg Lin		
MW-12-12	//	1)	Permeabiliti			
Field Information Well temporary number MW-12 on the east side of the HornRapids Landfill.						
Special Handling and/or Storage						
	ABORATORY SECTION	THI	<u></u>	Date .		
Received by Date Date						
,						
 Indicate 	Whether Sample is Soil, S	Sludge, Wa	ter. Etc.			

Use Back of Page for Additional information Relative to Sample Location.

RADIATION RELEASE

Bldg. MU-1Z Date 1-16-90

Released By Machine Date Operational Health Physics

Remarks

RADIATION RELEASE

Bldg. MU-12	Date /-/6-90
	nollarin
Released By One	rational Health Physics
ŕ	,
Remarks	1 (2.15)

TEST REQUEST FORM

		Cost Code/Work Order No. ED 332 Person J. LINDBERG Date 1-31-90
Test Requested	No. of Samples	Test Lab Information (Instruction Used)
Hypraule Consuctivity		ETAL-09
N/A	N/A	N/A
<u>N/A</u>	N/A	N/A
4/4	_ N∫A	N/A
	•	
Remarks FIEW SAN	APCE	Received By: R.G. ALEXANDER Date 1-18-90 Approved By: R.G. ALEXANDER Date 1-31 9

HYDRAULIC CONDUCTIVITY OF SOILS DATA SHEET Page _/_ Of _5__ Test Operator R.G Alexander Date 1-31-90<u>NO.</u> DATE DUE EQUIPMENT ITEM 3304 3-25-90 Balance 6006 Oven Thermometer Thermometer Thermocouple Temperature Controller Pressure Gauge Pressure Transducer Pressure Transducer Back Pressure Gauge Pressure Transducer Pressure Transducer 5623 8-16-90 Calipers N/A Load Frame Data Logger N/A N/A Immediate (User) Calibration Performed. (Documentation To Be Attached) Sample Preparation PARTICLE SIZE WEIGHT (Sieve Mesh Range) To ___ N/A ___ To ____ _ To _ _ To __ __ To _ __ To _ __ To __ Total OTHER COMPONENTS Total 100 % ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA. Checked By HCBenny Date 2-13-90

SAMPLE PREPARATION

Determine Weight of Samples in Container

Container No.	#6
Wt. of Sample + Container, g	2487.54
Wt. of Container, g	588,48
Wt. of Sample, g	1899.06

Determine the Water Content of the "Air Dry" Sample

Container No.	Le
Wt. Container & Wet Soil (A), g	2487.54
Wt. Container & Dry Soil (B), g	1912.94
Wt. of Water, g	574.58
Wt. of Container (C), g	588.48
Wt. of Dry Soil, Ws, g	1324.48
Water Content (W), %	43.38

$$W = (\frac{A - B}{B - C}) 100$$

SAMPLE COMPONENT	SPECIFIC GRAVITY, G	LABORATORY NOTEBOOK DATA LOCATION		
N/A	NA	N/A		
N/B	N/A	N/A		
W/A.	N/A	N/A		

ALL REQU	RED DATA ARE	ACCURATEL	Y AND COMP	PLETELY RECORD	ED. THE TEST	OPERATOR	WAS.	APPROPRIA	TELY
TRAINED A	ND UTILIZED C	ALIBRATED T	EST INSTRUM	MENTS AS INDICA	ATED ABOVE.	APPROVED 1	TEST A	ROCEDURE	S
WERE FOL	LOWED TO PRO	DUCE THE A	BOVE DATA.				_		

Checked By HBenny

2-13-90 HB 340

SAMPLE COMPACTION

Compaction Method

Static A

Tamping 🚧 🗸

STATIC Load Applied, g/ Layer length, cm	ayer 1	A/A	11 N/A
or	2	1	12
TAMPING No. Tamps per Layer/	3		13
Layer Length, cm	4		14
	5		15
	6		16
T-101 No. of 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7		17
Total No. of Layers N/A INTACT SAMPLE IN 4"46"	8		18
SS TUBE	9		19
10.00	10	V	20
Tamper Foot Diameter cm		N/A	
Tamper Applied Load, g		N/A	
Sample Diameter, (d), cm		9.78	
Sample Length, (L), cm		15.22	
Sample Mold or Permeameter Weight & Compacted Samp	le, g	249687	
Sample Mold or Permeameter Weight, g		594,47	
Weight of Compacted Sample, (E), g		1902.40	
Weight of Container & Uncompacted Wet Sample, (A), g		2487.54	
Weight of Container & Uncompacted Dry Sample, (B), g		1912.96	
Weight of Water, g		574.58	
Weight of Container, (C), g		588.48	
Weight of Dry Soil, (WS), g		1324,48	
Water Content, %		43.38	
Compacted Bulk Density of Sample, (γm) , g/cc		1.66	
Compacted Sample Dry Density, (7d), g/cc		1.14	

$$\gamma_{\text{m}} = \frac{E}{(\pi) (d/2) 2(L)}$$

$$\gamma_{\text{d}} = \left(\frac{\gamma_{\text{m}}}{W + 100}\right) 100$$

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked By HUBerry

Date 2-13-96

HYDRAULIC CONDUCTIVITY DATA SHEET

 Sample ID.
 6-043
 Page 4 of 5

 Procedure No.
 ETAL-09
 Date Issued
 12-1-89

DATE		TIME	- 			VOLUM	E DETERMI	NANTS			
Year 90	System Down (Hr: Min)	System Up (Hr: Min)	Time Change (Hr: Min)	Effli Temp (°C)	uent Weight (±0.1g)	Cont Tare		System Temp	Press Pore H ₂ 0 (pei) Cpu		Operator Initials
2-1		1000			-	150.46			191.3	N/A	REA
2-1	1400	STOP	4:00	22	150.89	150.46	301, 35	22	191.3	NA	REA
Z-2	-	1000	_		_	150.46			191.3	NIA	REA
2-2	1330	STOP	3:30	22	127.46	150.46	277.92	22	191.3	NIA	Reh
2-6	* ~	6930		_		150.46	_		191.3	NIA	REA
2-4	1430	5708	5:00	22	304.13	150.46	456.50	22	1913	NLA	Red
Z-7	_	0730				150.46			191.3	NA	RGA
2-7.	1430	Stop	9:00	22	509.10	150.46	659.56	22	191.3	Alu	RUA
2-8	_	<i>0</i> 8య				150.44	461.39°		191.3	NIA	RLA
2-8	1400	1415	6:00	22	3/6.92	150.46	461.38	22	191.3	NIA	Red
2-9	11:15	11:20	21:60	22	1010.01	267.36	1211.31	22	191.3	N/4	Rep
2-10	1120	1125	24:00	22	726.78	267.56	1199.14	ZZ	191.3	N/4	RGA
2-12	0725	0730	44:00	ابھ	1510.80	199.56	2310.36	21	191.3	N/A	RLA
12-12	1630	1635	9:00	عد	463.03	267.36	136.39	22	/9/3	N/A	RGA
2-13	0735	STOP	15:00	22	981.49	267.36	12.84.85	22	191.3	NA	RU4
2-13	STOP	ास्ड्र-१			HLB 2-13						RCA
								-			
											
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ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS
APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE.
APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked	Ву	HLBenny

Date 2-13-90

HYDRAULIC CONDUCTIVITY DATA SHEET

Sample ID	0-043
Procedure No.	ETAL-09

Page <u>5</u> of <u>5</u>

Date Issued <u>12-1-89</u>

			Effluent	Anaturie	<u> </u>	
Pear 90 (Mo/Day)	Hydraulic Conductivity (cm/sec)	Hydraulic Gradient (cm/cm)	(Sample Number)	Lab. Notebook Location	Effluent Description	Operator Initials
2-1	START	ग्हडा				RGA
2-1	1.11 ×10-5	12.57		-	CLEAR	RGA
2-2 .	START	TEST			CLEAR	RCA
2-2	1.07 X10-5	12.67	_		CLEAR	Rtis
2-6	START	TEST		_	Clear	ROA
2-6	1.80 ×10-5	12.57	~	-	CLOAR	RLA
2-7	JTART	T 85 T			CLERR	RGA
2-7	1.66 x 10-5	12.57	_		CLEAR	RGA
z- 8	START	1ह्रम	_		Clear	Red
2-8	153 ×10-6	12.57		_	CLEAR	RGL
2-9	1.42 ×10-5	12.57	_		CLEKK	RLA
2-10	1.14 × 10-5	12. 57		-	Clar	Rea
2-12	1.01 × 10-5	12.57		_	CLEAR	Rah
2-12	154 x 10-5	12.57	-		CLEAR	RGA
Z-13	1,84 4 10-5	12. 57		-	CLERR	RGA
2-13	STOP TES	- 1.5 4/- 0	4 x 10-5 C	M/SEC		RGA
	,					
			24			

ALL REQUIRED DATA ARE ACCURATELY AND COMPLETELY RECORDED. THE TEST OPERATOR WAS APPROPRIATELY TRAINED AND UTILIZED CALIBRATED TEST INSTRUMENTS AS INDICATED ABOVE. APPROVED TEST PROCEDURES WERE FOLLOWED TO PRODUCE THE ABOVE DATA.

Checked	Ву	HLBenny	•
Спескеа	ВУ		_

Date 2-13-96

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W	Westingh Hanlord	ouse Company
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CHAIN OF CUSTODY

Company Contact: J. W. Lindberg	Telephone: 6:5005
\	
Sample Collected by: R.D.Miller	_ Date: Inclusive dates _ Time: http://
Sample Locations:NW-12	
Ice Chest No.:n/a	Field Logbook Page No.:
Remarks: Field Log book Not wik - N-306-3	>
Method of Shipment: goit vehicle-hand co	wry to J. Alexander 2101-11 lab
Sample Identifi	cation
UW-12-1, plaste bag	MW-12-12, 5/5 liner-6"
Nw-12-2 " "	
MW-12-3, "	
mw-12-4 " "	
MW-12-5, "	
MW-12-4 "	<i>j</i>
MW-12-7, ""	
MW-12-8, " "	
MW-12-9, "	
MW-12-10, "	
MW-12-11, 6/3 liner-6"	
CHAIN OF POSSESSION	
Relinquished by: Received by: Received by:	Date/Time:
Comment Can O Hiler Thuller	- JWLindberg Jan 16901455
Relinquished by:	Date/Time:
Relinquished by: Received by: R4	10EF 1-18-90/0610
,	Date/Time:
Relinquished by: Received by:	Date/Time:

W	Westingh Hanford	ouse Company
----------	---------------------	-----------------

9

SAMPLE ANALYSIS REQUEST

PART I: FIELD SECTION CERCLA, 1100-	EM-1 Groundwater Monitoringle
Collector Pand Miller Date S	ampled: Jan 13-16, 1990 Time: NA hours
Company Contact Jwhindberg	Telephone (504) 376-5005

SAMPLE NUMBER	NUMBER & TYPE OF SAMPLE CONTAINERS	TYPE OF SAMPLE *	analysis re	QUESTED
MW-12-1	I plastic bag	Soil	Partide Size,	Moisture
MW-12-2	" "	ų.	//	И
MW-12=3	11	1)	11	11
MN-12-4	Ч	П	H	il
MW-12-5	11	ıl.	п	11
MW-12-6	1)	11	11	11
MN-12-7	1)	17	11	И
MW-12-8	1)	U	1)	O .
MW-12-9	()	11	įΙ	
MW-12-10	1)	11	и	r t
MW-12-11	1 6" Split Spoon Liner	11	Partide Size,	Atterberg Lin
MW-12-12	11	1)	Permeability	,

Field Information ** Well :	temporary number n	1W-12
Field Information Well -	of the HornRapids L	indfill.
Special Handling and/or Stor	age	
PART II: LABORATORY SECTION	N	····
Received by	Title	Date
Analysis Required		
* Indicate Whether Sample I	s Soil, Sludge, Water, Etc.	

Use Back of Page for Additional information Relative to Sample Location.

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54-3000-022 (09/88)

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